

'Paternal' poly criticized for industrial bias

by Sue Reid

The style of management at Huddersfield Polytechnic is old-fashioned and paternalistic with a bias towards industrial rather than academic practices. It has been alleged by the college's branch of the National Association of Teachers in Further and Higher Education.

In a severely critical submission to the Council for National Academic Awards, which made its quinquennial visit to the polytechnic last month, the branch claims that the present management system is inappropriate, the decision-making process clumsy and the academic board ineffective.

The submission says: "In practice the academic board has seemed to many members of the polytechnic to be completely ineffective and the executive power of the director and his closest colleagues has encompassed matters which could have been the subject of policy decisions by a more effective academic board."

It adds: "The current style of management in the polytechnic is old-fashioned and paternalistic, apparently modelled on an industrial rather than an academic type of management. It seems inappropriate to us for an institution where most of the initiative for courses and for day-to-day running and teaching of courses must necessarily come from the academic staff."

The branch alleges that Mr Keith Durrants, rector of the polytechnic, has in practice the power to make any appointment, to overrule an appointments committee, and to decide to which department staff should be appointed. This is regarded as a "most serious situation."

The submission calls for a restructuring of the academic board and requests the CNAA to consider the effectiveness of the processes

of academic decision-making at the college. It concludes: "The ineffectiveness of the present academic board, in our view, may be attributed to both its size and its heavy ex-officio representation. Proposals for the revision of its composition do not seem calculated to make it a more effective decision-making body."

A second memorandum submitted to the CNAA by Mr David Mann and Mr Mervyn Drayton, two staff assembly governors at the polytechnic, is also critical of the process of government. It alleges a widespread concern among academic staff about the lack of adequate procedures for democratic government.

It is the staff assembly's view that the failure of the academic board to fulfil its duties arises partly from its high proportion of ex-officio members, and partly from a system of appointing deans to carry out, in person, functions assigned to the academic community as a whole, claims the document.

The tendency to exclude teaching staff from decision making and put it in the hands of a small number of academic staff, who did little or no teaching, had increased to such a level that it now cast doubt on the polytechnic's ability to pursue priorities appropriate to an academic community and hence threatened the future of both teaching and research. Both the governors argue for the college's articles of government to be revised.

Dr Edwin Kew, CNAA chief officer, said this week that the visiting party had discussed the NATFHE submission and was now satisfied that the academic board had instituted appropriate methods of dealing with the issues raised.

Mr Durrants, the polytechnic's rector, said the CNAA had given the college a "clean bill of health". The CNAA will publish its quinquennial report this summer.

Annan report sets stage for more educational air time

by David Walker and Auriol Stevens

The Annan committee on the future of broadcasting, which reported this week, has set the stage for a major expansion of the air time devoted to education.

The committee, led by Lord Annan, provost of University College London, recommends the creation of a fourth "open" television channel to show not only Open University output but also educational programmes financed by local authorities, universities and colleges. This channel would serve as a medium for Welsh language broadcasting in Wales and also transmit a range of programmes by independent producers.

The fourth channel, run by an Open Broadcasting Authority, would not be an "educational ghetto" as feared by the Open University in its own submission to the Annan committee. Influenced by the work of Mr Anthony Smith, former broadcaster and now fellow of St Antony's

College, Oxford, the committee recommends a channel containing information and entertainment as well as education. It would provide air time for "access" television and some of its funding would come from advertisements.

The Annan committee has paid regard to the submissions received from academic media researchers, especially on the question of how the BBC and independent television ought to organize surveys of their audiences.

Mr Paul Walton, of Glasgow University, a member of a research team which recently produced *Bad News*, a study of television current affairs, said he found the report "enterprising". In particular he noted the recommendation that audience studies be consolidated under a single body serving both BBC and independent television and the opportunities this afforded.

Other main recommendations include the establishment of an "open college" similar to the Open University but at a lower level.



Princess Margaret listens to Spectral, an electronic composition based on the song of the hump-backed whale by Mr Tim Souster, research fellow in electronic music at Keele University. It was part of a one-day visit to the university, of which she is chancellor.

University and school teaching 'should be better matched'

Teaching methods in the sixth form and in universities should be better matched, and first year courses need to be planned with a recognition that it is sixth-formers and not fully prepared students who are entering higher education.

These are two major conclusions after nearly a decade's research by two educational psychologists, which will be published shortly in a book called *Degrees of Excellence*. The researchers, Professor Noel Entwistle, of Lancaster University, and Dr John Wilson, of Moray House College of Education, Edinburgh, say their conclusions are germane to the debate now going on about the replacement of A levels by a wider sixth form examination.

They call for a new body to be set up with special responsibility for developing new methods of teaching and curricula in universities and colleges, doing for higher education what the Schools Council

does for primary and secondary education.

The research, covering school pupils and university students in both Scotland and England, was into the best explanation for academic success. For example, the authors discovered—perhaps unsurprisingly—that success in secondary school was the best indicator of subsequent academic achievement. The ratings were usually a good guide to whether a student would fail or drop out, though less reliable as an indicator of future success.

Personally characteristics are related to success in degree examinations. For instance, among language students it was found that "tender-mindedness" and having religious values are associated with above-average degree performance. *Degrees of Excellence*, by Noel Entwistle and John Wilson, to be published in May, by Hodder and Stoughton, £7.50.

Occupied NELS site closed

The governors of North East London Polytechnic this week closed down the college's Barking campus which has been occupied by students for two weeks protesting over tuition fee increases.

They have now applied for a court injunction to remove the students still in occupation who, they claim, have refused to negotiate with Dr George Brossan, the polytechnic's director.

A public meeting about tuition fees at Manchester City Council education office on Tuesday evening, at which local education officers after the Labour group on Sheffield City Council's education committee agreed to issue a five-point statement and to publicize the benefits

of a hardship fund. He also said he would make representations to the Government over the plight of students repeating years of study, unless the Barking precinct was handed back into the control of the polytechnic it would be closed.

Students at Manchester Polytechnic were this week staging a sit-in on the Barking campus, a site in which local education officers have raised tuition fees. At a meeting of the Education Committee of the Labour group on Sheffield City Council's education committee agreed to issue a five-point statement and to publicize the benefits

Count me in, says the Count

by Judith Judd

A middle-aged German count is among the contenders for deans at the National Union of Students conference in Blackpool, work.

County Lyxander de Gra, a third-year student reading law and philosophy at Southampton University, is standing on an independent ticket to end the present crisis in higher education.

His manifesto reads: "Education should impart a vision, a confidence in the value of the human intellect, a source which generates a pride in the unknown."

Students at Southampton are uncertain of his political views, although he has been active in the past. He is definitely not a right-winger, said one. "He is in the occupation over fear."

He is best known in the past for eloquent speeches in his abstention. Outside it, he is an amateur theatrical.

The count's chances are slim, however. The broad Left ruling Labour and Communist supporters is almost certain to hold on to the union, which may face some class divisions. It may also have to rely on support of Conservative and other candidates.

Miss Sue Simpson, the group's candidate for president, a member of the Communist Party, said the Communist Party's executive will face competition from Mr Manning, a former unionist, and the candidate of the Socialist Students' Alliance.

Mr Charles Clarke, the president, said the vote of the Federation of Conservative Students, which is expected to be between 160 and 200 delegates of a total of 800, would be an important influence in the election.

He expected the new executive to consist of 11 broad Left members, two Conservative, one member of the ultra-left and one Liberal. The present executive of 12 broad Left members, two left and one Conservative, is expecting that there will be non-aligned delegates at various conferences.

One of the most fiercely debated issues will be the increase in fees. Sheffield students' union proposes a national fee cap.

The executive will be another attempt to manage the union's policy of staying out of politics and social issues.

The executive view was set out at the December conference, which may also face decisions on its policy on the closure of education. Its opponents, however, should be used for higher education and they should be retained at training institutions.

The recurrent grant is £562m, based on an assumption that the universities will receive £152m more from increased tuition fees. The first time the recurrent grant also includes a sum—£32m—the local authority rates payable by universities.

Although the grant is a cash limit, it includes an undisclosed figure for staff salary increases. Mrs Williams indicated that it was not absolutely fixed.

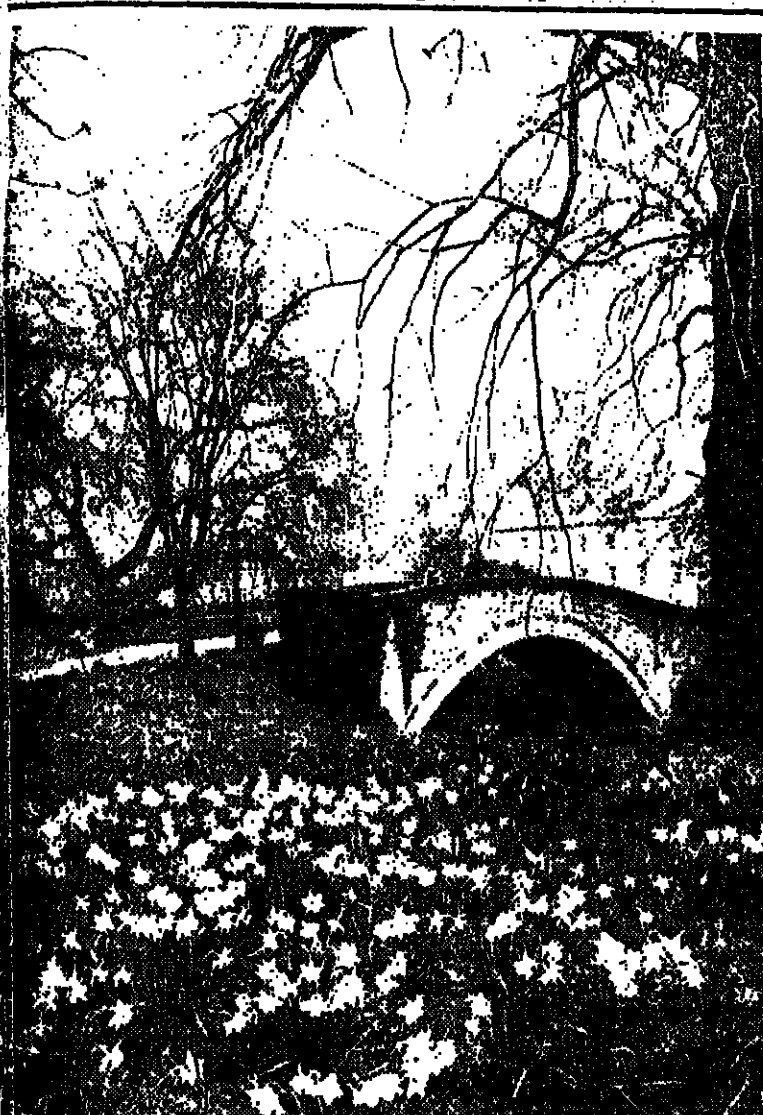
Universities will also receive an additional £35.1m for furniture and equipment, compared with £33.5m this year.

Mrs Williams also announced provisional figures for the universities' recurrent grant for the next three years, thus restoring some elements of the quinquennial system of financing which was abandoned in 1975: £556m in 1978-79, £564m in 1979-80 and £572m for 1980-81, all at 1977-78 prices. They assume the same level of tuition fees as in October because no decision has yet been taken for fees in those years.

Provisional figures have also been announced for the furniture and equipment grant. They are: £39m in 1978-79, £39m in 1979-80 and £42m in 1980-81.

Mr Onkes, Minister of State for Higher Education, said this week that the decline in the recurrent grant between 1977/78 and the following year was partly because

continued on page 3



A scene which might warm the heart of Wordsworth, American tourists, romantic undergraduates, as spring comes to King's College Chapel and the "backs" at Cambridge.

Drop in recurrent income less than UGC predicted

Universities' total recurrent income for 1977-78 will be £682m, a cut of 1 per cent in real terms on the amount they received this year, Mrs Williams, Secretary of State for Education and Science, announced this week.

The reduction is far less than was originally feared by the University Grants Committee, which had predicted about a 4 per cent drop.

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continued on page 3

Birthrate threatens university growth administrators say

by Frances Gibb

Universities and polytechnics may be in danger of suffering the same fate as that which has overtaken the colleges of education because of the sharply declining birthrate, the Conference of University Administrators has warned.

In a report on forecasting higher education numbers, presented at their annual conference this week in Swansea, the CUA says this is the most serious threat yet to the Robbins principle. The era of growth in higher education is drawing to a close.

Small universities would not be able to grow to medium size, and the medium-sized would not be able to catch up with the larger, it says. Advanced further education might be even more vulnerable, because despite growth in polytechnics, universities still attracted most of the better candidates.

It warns that as a remedy the government might wish to hold down expansion so as not to recruit extra staff or invest in additional plant which would be surplus to requirements when the downturn in numbers arrived.

But a survey of 18 year old age group would fall by about 32 per cent between 1982 and 1995, the officer might not be as bad as predicted by the Department of Education and Science.

Recent statistics showed that the decline in the birthrate was in skilled and unskilled occupational groups, while about 50 per cent of fathers of university students were in professional or managerial occupations.

Other mitigating factors might be the current trend for more sixth-formers to stay on at school and obtain higher education qualifications, and for more women and mature students to apply for higher education.

The report is the result of more

than a year's work by 14 members of the CUA under the chairmanship of Mr M. L. Shattock, academic registrar of Warwick University.

Its main purpose is to spell out and provide some explanation of the statistical pointers available so that those involved in administering higher education can gain a better understanding of the issues.

No one who had studied the statistics available, it says, could doubt that higher education was approaching a watered quire as significant as that which prompted the Robbins inquiry in the 1960s.

"But this time the climate is considerably less optimistic and some of the liberal contractions of the early 1960s have been severely shaken."

It urges universities and the whole of higher education to think about these problems now, so as not to be caught in the state of unpreparedness that characterized the colleges of education."

If these questions were being considered, very little data or conclusions were being made openly available: hence the present unilaterally attempt to examine the uncertainties of the future shape of higher education."

The crucial statistics should not be restricted to the Government. The report calls for a joint standing committee of the appropriate Government departments and all parts of higher education, to monitor statistics relating to demand for higher education and ensure the right questions are being asked and answered.

"Unless some machinery like this is established the feedback of what is actually happening to the ratio of demand at this crucially important time will not occur quickly enough or in an atmosphere of sufficient trust."

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Leader, page 16.

Profile of ideal chemist

by Clive Cookson
science correspondent

The ideal chemist is above all a man or woman of integrity, demonstrating honesty, impartiality, seriousness, reliability and moral courage. Logical thought and ability to communicate are next in the list of his most important qualities, above technical competence, but commercial appreciation does not even make the top 12.

This picture emerges from a detailed study by the Royal Institute of Chemistry of the attitudes of 50 of its past and present council members—all senior academic industrial chemists.

Mr Norman Thompson, the Institute's president, and director of the survey, gave the results to the RIC's contemporary meeting in London this week. He found the fourth place given to technical competence "surprisingly low", and it was "strange and disturbing in these industrially turbulent days" that commercial appreciation was not included among the 12 attributes most relevant to achieving an outstanding career in chemistry.

Unless chemists, not just those in industry but also in the public sector and the academic world, are aware of the commercial importance of their work and objectives of their organization and society at large, their contribution, perhaps a major component, is missing from the conclusions they draw from their work's results.

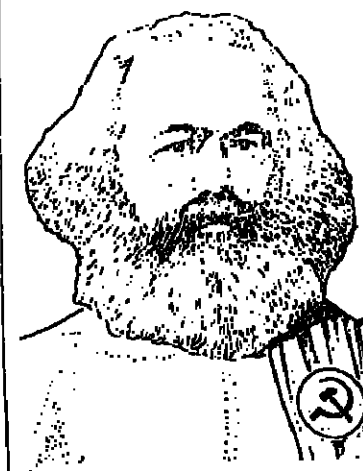
The same 50 chemists were asked what qualities were necessary for leadership, and again integrity came first by a long way.

"Whilst legal regulations can have their place in ensuring adherence to routine procedures, they cannot replace the integrity of a professional, applied at all times and under all circumstances."

RIC conference, page 3

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More awards will 'become mandatory'

from Judith Judd

The Government is prepared to make more discretionary awards mandatory...

On grants Mr Clarke said that money released by the ending of the child tax allowance...

He appealed to students to take part in the activities of their unions in order to safeguard democracy.

The exclusion of members deemed racists or Zionists was not part of a democratic union...

Other changes are to be made to the way in which two-year advanced courses...

Postgraduate studentships, from either the Department of Education and Science or research councils...

The starting point in the parent...

New president promises democracy

Ms Susan Slipman, a Communist Party national executive member...

The first woman president, she is 27 and a member of the Broad Left ruling group...

Mr Hugh Lanning, a former treasurer of the union and a member of the ultra left Socialist Students Alliance...

The Broad Left, the ruling group of Labour Party and Communist members...

Other candidates in the NUS election, but its hold on the union was weakened...

Ms Susan Slipman, the ultimately successful Communist candidate...

The hustings comprise discussion of four questions, submitted by student unions and read out by the chairman...

The eight candidates ranged from what the chairman correctly described as the Communist Party...

Students will no longer be disqualified from a mandatory award of six years before a course is as a result of a late application...

Mature students will still have to support themselves for three out of six years before a course is eligible for a grant...

And, indeed, Mr Hugh Lanning, for one, had grave reservations about free speech...

Speaking at the seventh of the eight regional conferences on education, Mr Fowler said that without this finance, there would never be a stable programme of in-service education...

Retraining and refurbishing the skills of teachers would be particularly important in the next few years because of the relatively static nature of the profession...

Such a programme might imply improved pupil/teacher ratios, but if so then the teacher targets might have to be looked at again...



The happy couple—outgoing president Charles Clarke and his successor, Sue Slipman, the woman to hold the post.

Worker versus Count at hustings

by Peter Wilby

Before casting their votes for the next president of the National Union of Students...

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Physicists rally to defend 'undervalued' subject

by Clive Coulson

Physicists working in Britain's medical schools are rallying to defend their subject...

Representatives from 15 medical physics departments gathered at St Bartholomew's Hospital...

Physicists and biophysicists from London medical schools have drawn up a document...

What they all seem to have in common is a constant battle for space in the curriculum...

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Chemists warned about 'siren song' temptation

by Clive Coulson

Beware the siren song of manpower planning, Sir Frederick Dainton warned the Royal Institute of Chemists...

Manpower planners obsessed with number and paper qualifications not only have nothing to offer in improving the mismatch...

He gave his audience of chemists a mathematical demonstration of the impossibility of matching the supply and demand for trained scientists...

Obsession with numbers of qualified people meant that their quality was neglected. "I have often observed that as soon as universities start looking for applications in a particular field...

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Units plan for mature students

by Frances Gibb

An innovative scheme allowing mature students to take individual units with degree or diploma programmes has been launched by Hatfield Polytechnic.

The scheme, believed to be the first of its kind in Britain, frees mature students from enrolling for a complete course...

Thirty students enrolled on the scheme when it was started last autumn. More than half are updating their knowledge in a particular area...

The new scheme allows mature students to attend the same lectures and seminars as students taking full degree or diploma programmes...

Students now enrolled are taking units in humanities, the information sciences, engineering, natural sciences and social sciences...

Mrs Ruth Michaels, senior tutor for continuing education, said this week that no more than eight students could be carried forward to a degree programme...

The associate student programme had taken six months to plan, she said. Students could study during the day or in the evening...

Universities must give greater emphasis to fluent and accurate expression of unambiguous meaning in written and spoken English...

Chemistry undergraduates could, for example, be made to write a small thesis and defend it in a seminar against questioning from other students...

The recently-established Further Education Curriculum Review and Development Unit is expected to have a budget of £500,000 in the coming financial year...

The unit, which was set up last December, has a brief to review and evaluate existing curricula in further education.

The UGC is expected to indicate to selected universities subject areas which could be protected from the 1 per cent cut...

Some departments prefer to introduce physics at the clinical level. For example, Professor R. E. Eliott, who wants to introduce a course of 15 or 20 lectures into the Leeds medical course...

Cuts hit arts and business studies graduates badly

by Frances Gibb

Arts and business studies graduates are the most seriously affected by cuts in central and local government job opportunities...

There had been no lack of vacancies in industry and commerce, the report says. But a limiting factor was the reluctance of many graduates to apply for jobs further afield than Glasgow...

The market remained good for business and administrative graduates. Accountants also had no trouble finding jobs.

Among science graduates the most marked change from last year was the fall in the numbers taking up teacher training...

Engineers, of all kinds continued to be in healthy demand. But there was some evidence of a drop in demand for civil engineers because of a reduction in building projects.

Standards reached by Scottish university students in special first-year tests designed to monitor their skills in mathematics, physics, chemistry, French and German...

The results of the mathematics test, taken by 2,913 students, showed that the main weakness was in trigonometry.

But the report said there was a correlation between students' grades in school examinations and their performance in the tests.

The Headteachers' Association of Scotland, the Scottish Certificate of Education examination board, and the Scottish Education Department have discussed the report...

Local education authorities are to be asked to consider full time research staff in the same light.

The executive of the National Association of Teachers in Further Education agreed last week to oppose the social contract.

They will recommend to the union's annual conference in June that the salary policy for 1978 should be based on the principle that restrictions on free collective bargaining be progressively removed.

Poly and FE pay rises

by Frances Gibb

Pay increases for polytechnic and further education lecturers were agreed this week by the Burnham further education committee.

The increases will range from £130 a year for staff earning less than £3,200, to £180 a year for those being paid £4,160 or more a year.

A settlement was reached after detailed talks about annual increments between the teachers' panel and the management side.

The management representatives contended that the increasing cost of increments to the overall wages bill should reduce the settlement by £37 a head.

The teachers' panel won agreement that this figure should be £28. Consequently those staff earning between £3,200 and £4,160 a year will have a five per cent increase less £28.

Full-time adult education staff who are paid on the Burnham further education scale will be treated in the same way as full-time staff.

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Fowler urges in-service grant. A special grant to local authorities for in-service education and training was called for by Mr Gerald Fowler...

No prison for sit-in students. Two students who defied an order to leave an occupied building in London were sentenced to jail...

Income drop less than expected. The increased income universities were expected to reap from tuition fees. These were expected to be higher in 1978/79 than for next year.

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Statistics, Computing Operational Research. For a descriptive brochure and reply-paid provision form send this coupon to PRISMATRON PRODUCTIONS LTD.

FILM-MAKERS ON TOUR. This is a new scheme designed to encourage the screening of artists' films and to offset some of the costs that are incurred in showing experimental film.



Peter O'Toole and Donald McCann in Waiting for Godot. Beckett's work is part of the Cardiff course.

Theory and practice of drama

by Frances Gibb

To bridge the gap between the stage and the seminar is the aim of a new postgraduate course in modern theatre starting at University College, Cardiff, in October. Students will not only read and analyse plays, but learn at first hand how an actor approaches his role, what problems a director must resolve and what facilitates a modern theatre can offer to enhance the dramatist's conception with sight and sound.

The practical aspect will be offered by the university's Sherman Theatre, which already runs a number of diploma courses and a large and varied programme of both professional and amateur work. On the academic side, the course will start with drama in Dublin and London at the beginning of the century. It will look at the first national and experimental theatre in Britain, at the impact of Ibsen on the London stage, and end with Beckett, Pinter and Stoppard.

Theory and practice will be mixed throughout. Students will be encouraged to take part in the short-man diploma courses in performing skills, so they will know how an actor learns and in aspects of technical training that will teach them how a theatre works.

There will be a theoretical framework, with seminars based on an author or topic, and they will also be expected to work out their own projects. In an essay and their work will take them outside the seminar subject. Some will involve practical experiment, and students will move from training to production.

Professor Malcolm Kelsall, head of the English department, says: "There seems no reason why a student who has become interested in Edward Gordon Craig should not experiment, for instance, with secrets and lighting or mount a production of a Yeats play with the *uber-marionette* in mind. Or something more routine might emerge: a theatre workshop on the scene at the front line from *The Silver Tassie*, a transference of a Pinter script from the theatre."

Professor Kelsall admits that practical work, from essays and materials, is not always available. He says, "Also, even a large department might not have enough space for a course in theatre which inevitably always easily accessible to linguistic barriers."

But there are advantages. The students, graduates, and should be in small groups, with one, or at most a one-and-a-half, student ratio, and will have the resources of the whole faculty at their disposal.

Assessment will be of work, although a student asked to discuss practical projects might also be asked to write a production or the designs of a production.

COURSES

BRITISH COUNCIL COURSE

EDUCATION 16-19

transition to work and higher education

4-16 December 1977

at Chorley, near Preston, Lancashire

The Director of Studies will be David Moore, Principal of Nelson and Colne College and currently seconded as Senior Visiting Fellow to the Institute of Post Compulsory Education at Lancaster University.

The course, which is residential, is intended for senior academic and administrative staff from overseas who are either currently working with the relevant age group or seeking information for the basis of possible changes in the structure of their own systems.

Prospectuses and forms for registration may be obtained from local Representatives of the British Council or from the Courses Department, British Council, 65 Davies Street, London W1Y 2AA.

Application forms must be received in London by August 1, 1977.

Fee £330

Development Studies in Ireland

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Applications are invited from government officers, business managers, teachers and researchers in developing countries for the above one-year M.Sc. course starting in October, 1977.

The course is interdisciplinary and combines academic course work with practical experience in a selected public enterprise. An individual course of study is designed for each participant depending on his academic background and topics related to his own country.

Applications may be eligible for Irish Government financial support—see Website, National Fellowships or other media.

For further details and an application form please write to: The Director of Studies Development Programme, Graduate Studies, Trinity College, Dublin 2, Ireland.

THIS SPECIAL BOOK NUMBERS 1977

A complete list of the special book numbers planned for the year 1977 is available from The Advertisement Manager, The Times Higher Education Supplement, PO Box 7, News Printing House Square, Gray's Inn Road, London WC1X 3EY.

21 months that could ease world shortage

An MSc in minerals engineering is to be introduced at Birmingham University. It will be Britain's first broad-based postgraduate course for potential managers in the minerals industries, the university says. "Although the need for it has long been felt and indeed is reflected in the structuring of several undergraduate programmes."

The 21-month course aims to help alleviate a worldwide shortage of engineers and scientists who have the detailed knowledge and training needed to coordinate the many facets of the industry, and on whom the effective exploitation of the world's diminishing mineral resources will depend.

Subjects covered will include origin and recovery of minerals, metallurgy, processing, industrial minerals, computing, control and operational research, fuel preparation and use, fuels and furnaces, iron and steel, and resource management.

The course will equip men and women to work in research and development, production, manufacture or management. The normal entrance requirement will be a good honours degree, but non-graduate students with good professional qualifications and industrial experience may be considered.

Unit hopes to broaden outlook of industrial managers

by Clive Cookson science correspondent

The Technology Policy Unit at Aston University is to offer a new MSc in social aspects of science and technology from October. Its main aim is to produce administrators and managers with an appreciation of the wider implications of their decisions and a more flexible approach to their work.

The unit's director, Professor Ernest Bram, hopes the course will appeal mostly to scientists and engineers working (or intending to work) in industry, though he expects some teachers to take advantage of it too. Science and engineering first degrees are preferred, but technical knowledge will not be essential.

Industrial firms have been keen about the course, and their comments have encouraged Professor Bram.

Students will have the choice of attending for 12 months full-time or two years part-time. Full-time students will spend the first term on lectures, seminars, tutorials (the MSc will be taught course). Then, after Easter, they will devote time to an individual research project to be written up as a dissertation.

English degree 'equal to any'

Mathematics and culture

In an attempt to cater for the high demand for places on English literature degrees, the University of London has launched a BA degree programme in the subject to assist local students.

The programme, which began last autumn, has proved popular and allows local students to take a course comparable with those offered by universities. The college says the principal aim of the degree is to provide a scholarly education in English literature through the development of an informed critical response.

The first term is preparatory. The next seven each concentrate on a single period of English literature, allowing students to examine various authors in depth, and to compare and contrast them with their contemporaries. The programme allows for considerable progression and continuity.

The entrance requirements will be two A-level passes, but HNC and OND qualifications will also be considered. The college hopes the course will prepare students for careers in teaching, the scientific service, industry, local government, Environmental and public health.

Dorset takes broad look at science

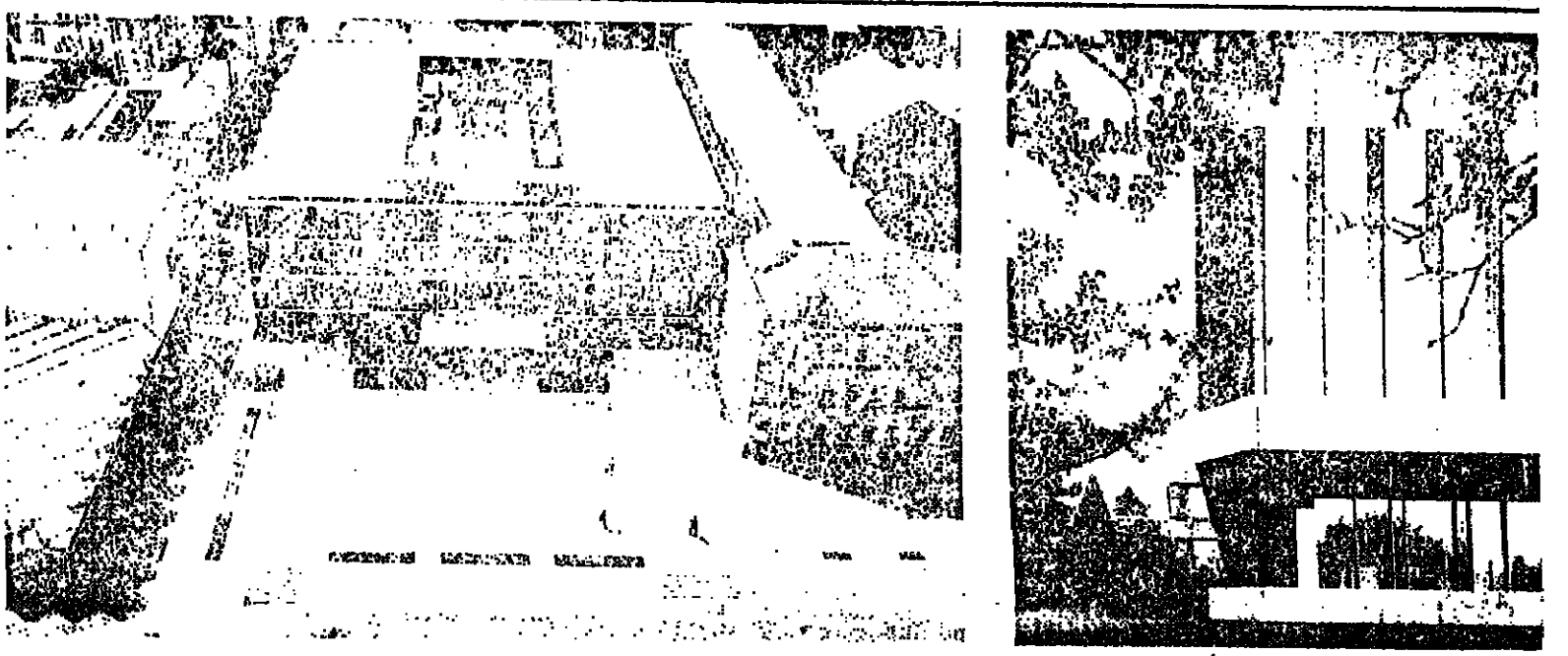
Students at Dorset Institute of Higher Education will be able to take a broad look at science and its relationship with society in a new combined sciences course.

The course, an unclassified ordinary BSc to be taken over three years, will involve a study of scientific concepts and their relation to each other.

Students will be taught how to use investigatory procedures in the laboratory. The aim will be a course which is academic but not too technical in its treatment of particular subjects nor too specialist in approach.

The entrance requirements will be two A-level passes, but HNC and OND qualifications will also be considered. The college hopes the course will prepare students for careers in teaching, the scientific service, industry, local government, Environmental and public health.

Tony Aldous evaluates the architectural and environmental features of the award-winning libraries at Nottingham and Leicester universities



The new university libraries: Leicester (left) and Nottingham

Beautiful buildings where books feel at home

Nottingham and Leicester Universities have both acquired new libraries in recent years; both have won major architectural awards; and little more than a year separated their completion. Both are efficient and attractive buildings—yet Leicester's has certain serious shortcomings. The difference between them represents not inferior performance by architect or client, but in large measure a sharp change in economic climate. Nottingham's library won University Grants Committee approval and got off the ground as a project in the halcyon days of generous finance and ambitious objectives. Leicester's university library suffered the sharp nip of fiscal frostbite: delays brought it into a period of budgetary stringency and frightening inflation in construction costs.

The Nottingham library, opened in the summer of 1973, was designed by architects Faulkner-Brown Hendy Watkinson Sumner and cost just over £1m for the building and its equipment. It stands at the highest point in Nottingham's parkland campus and its site used to be regarded—with its tennis courts and lawns—as the sacrosanct green heart of the university. Yet it is undoubtedly the right site for a library in its modern, extended role of learning resources centre.

Its external appearance has a classic simplicity. White concrete panels (each weighing five and a half tons) hang vertically to clad the top two floors (levels three and four) with narrow slit windows between them. Set back below them is the continuous wall-to-ceiling glazing of level two, which is ground level at its northern uphill side and below that and partly visible behind grassed mounding, one level, with its unloading dock at the south-western, downhill corner. The overall impression the building gives is of a cool, white temple of learning. But unlike many modern libraries, Nottingham, with its windows, "declares itself as a library" in the words of librarian Dr R. S. Smith. From outside you can see people using books and you get a reassuring sense of activity. It is palpably a hive as well as a temple.

Which shall stay and which shall go?

In the first of a series of articles on teacher training reorganization, Judith Judd examines how the DES decides the fate of colleges

Mr Gordon Oakes, Minister of State for Higher Education, has until June to draw up the final list of colleges and departments of education which will lose their initial teacher training status. The Government has emphasized so strongly that its original proposal, published in January, was only a proposal and subject to consultation, that some changes seem inevitable.

Which of the deputations from colleges and local authorities now pouring into the Department of Education and Science will be successful? Which should be successful? During the coming weeks *The Times* will be looking at the Government's proposals region by region and examining the arguments for and against them.

Leicester's university library, by architects Castle Park Dean Hook, was designed to a much tighter budget. Paced with rising costs and tightening cost limits, the university had to choose between losing air-conditioning and losing space. They topped 20 per cent of the area of stage one (so that floor space as built totals 8,000 sq metres as compared with Nottingham's 10,000), and reallocated space to book storage at the expense of reader space.

The five-storey building was conceived as linear, extendable and flexible. Extensions in the near future are now, for cash reasons, unlikely; but the way in which the building responded to several late changes in organization—from sub-divisional to integrated—is a tribute to its flexibility.

As a piece of "townscape" it is also a considerable achievement. Its site abuts on one side a "Basal Georgian building, the Fielding Johnson building which houses the university administration, and on the other one of the most famous of post-war university buildings, Sir John Gowan's engineering building. The new library steps modestly back to create a landscaped square with these two distinguished neighbours, and offers a facade of dark, reflective glass in which the exciting roof line of Sir John's engineering workshops and laboratories are mirrored with scudding clouds. Behind that glass facade is an insulating layer of air; then the concrete block walls of a fully air-conditioned library. The third side, abutting the Fielding Johnson building, has a glass canopy in which plants climb on wires to create a "greenhouse" in the gap; the fourth side is a "temporary" ribbed aluminium wall, removable when money is available for extension.

Inside, the Leicester library suffers in three ways by comparison with Nottingham: its wall finishes had to be cheaper, so they lack the elegance and maintenance-free qualities of Nottingham; the loss of one-fifth of the building means that readers' spaces are already heavily used (4,000 readers' visits a day in a university of 4,000 students); and instead of the carefully chosen and designed furniture originally envisaged, the university has had to press into service a hotchpotch of shelves, tables and chairs drawn from the former makeshift libraries.

Where cost allowed the architects to design and specify, as with the

break up what would otherwise be rather drab, narrow vistas. Thick and high quality brick finishes to walls, and vinyl covering for the concrete supporting columns also enhance the general impression of quality.

The librarian says he is "thoroughly satisfied and very proud" after four years in the new building. He finds it extremely efficient and describes it as architectural functionalism at its best. His users have responded in the compliment it pays them: in four years there has been no vandalism whatsoever—not even minor graffiti. Dr Smith registers just two reservations. The staircase, which has the same air of luxury and is open at the bottom, invites people to linger and chat. It could have been wider. And he sometimes wonders about the coffee bar that is so popular as a meeting place that it attracts many students not using the library. Sometimes a noise and general untidiness tend to spill out from the coffee area into adjacent spaces. Possibly, with hindsight, one would have made it a self-contained unit.

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Like Nottingham, the Leicester library tucks its closed stacks, workshops and backroom operations into its lowest floor. The air-conditioning plant is, however, on the roof where it occupies pavilions set in a rooftop lake which serves both as an efficient form of insulation and as an attractive feature whom seen from any of the university's three adjacent towers.

As John Winter, who appraised the building for *The Architects' Journal*, puts it: "Most modern roofs are asphalt with puddles: it seems beyond our skill to get rid of the puddles and asphalt is rather dreary anyway, so it was an eminently sensible decision to make the roof one big puddle." The architect has also saved space and money by using hollow structural columns and beams in lieu of separate air-conditioning ducts.

Leicester University library (stage one), completed in October, 1974, cost approximately £1m. It won a Royal Institute of British Architects award in 1975. Nottingham University library has won RIBA Craftsmanship and SCOLUL Library Design awards and a Concrete Association Commendation.

That it is a national, rather than a regional supplier of handicraft teachers. In the North there is anger that an area which is already deprived in most other ways should be faced with a severe cut in higher education opportunities.

The DES has also had to consider the historic share of places belonging to the churches. According to this, the Church of England has one-sixth of the total, around 7,500, in fact, it receives more than this in the proposed list, with 8,800 places remaining in church colleges and 1,500 places being transferred from church colleges to universities.

This has caused some muttering, though it is arguable that those church colleges joining universities will lose at least some of their denominational nature. The subject of 'standards' is a sensitive one. *The DES* paper is cagey about it, ending with the remark that any college can improve rapidly under good leadership. Mr Oakes has said that the inclusion of a college in the list does not mean it is considered to have low standards but presumably some assessment has been made. The cutback is so great that some colleges with high standards will have to go.

Is there method in the DES planning? At one extreme there are those who see the whole exercise as entirely rational. At the other is the Conservative MP who says that the majority of the colleges earmarked for closure are in Conservative constituencies and the whole is political. The latter is right in the sense that the day of the small monasticism in the heart of the countryside is over. The smaller colleges are the least likely to have their plea for retention heard.

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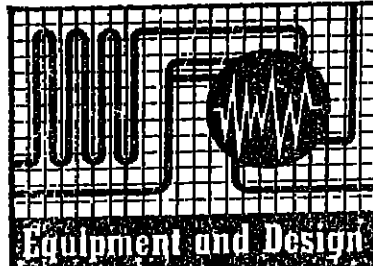
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11550



Equipment and Design

How science will go into orbit

H. S. Wolff

"A versatile scientist is required to work for seven days in a zero gravity orbiting laboratory. The duties will include the operation of a variety of experimental devices by teams of scientists from many different countries. No previous space flight experience is required, but applicants must be under 55 years old in July, 1980, and be in good health. Training will be given in Europe and the USA. Apply to ESA."

While it is unlikely that an advertisement on quite these terms will appear in the £6,000 plus appointments pages of *The Times*, the advertisement is being called, will be used for space missions starting in 1980 and continuing at least through the next decade.

The Spacelab programme in which the European Space Agency associated with NASA must rank as one of the biggest, international collaborative science and technology projects, which the world has seen. Yet, perhaps understandably, in a time of shrinking budgets, it has received relatively little publicity, and enthusiasm in Britain has been muted.

The concept of Spacelab differs radically from previous manned-space missions. In the past almost all hardware carrying the crew was lost, either by burning up in the atmosphere or continuing to orbit in space. In the Spacelab programme almost all of it will be recoverable and re-usable for many missions.

The key is the NASA built shuttle looking rather like a medium-sized aeroplane with abbreviated wings and a fuselage which can be opened along the greater part of its length to expose a cargo bay. The shuttle is put into orbit by large booster rockets, which detach at the appropriate phase of the launch and drop into the ocean for subsequent recovery. It then remains in orbit around the earth for mission durations between seven and 30 days, re-enters the atmosphere in a controlled manner,

Safety and the hidden hazards

Sheila McKechnie

The hazards which affect laboratory workers are often concealed partly because technicians are dispersed in small groups and partly because the hazards which affect production employees.

Technicians, however, have problems which are quite unique and apart from codes of practice issued by the Department of Employment (many of which are out of date) there is little regulation to set standards.

Under the 1974 Health and Safety at Work Act, many laboratory workers were brought for the first time under the minimum protection of the law. Health and safety executive inspectors can now take action in certain cases to issue "improvement" or "prohibition" notices. While this is a step forward there is a great need for regulations in laboratories to improve standards and certain of the Association of Scientific Technicians and Managerial Staff will be pushing

flies back to its base, and lands on a runway. Inside the cargo bay a variety of payloads can be carried ranging from a number of pellets on which instruments such as microscopes can be mounted to a laboratory, or independent space craft which can be placed into orbit and left there possibly for recovery on a later mission.

One of the major European (ESA) contributions to the design and construction of a versatile laboratory which can be used by a number of disciplines. The shuttle will be operated by two to three professional astronauts while the experiments will be performed by two to four scientists who will work in the laboratory and live in the shuttle. They will not require any specific astronaut training nor will the stresses during launch or re-entry incommode anybody in normal health. The internal environment, with the exception of the absence of gravity, will be comparable with that of a terrestrial laboratory.

Because of the relatively low g forces during launch (maximum about 3g) and the general facilities in terms of power supplies, permissible size and weight and mountings which are provided, the equipment to be used for experiments should be less expensive and less specialized than that which has been associated with space science laboratories.

The instrument racks which line the inside of the laboratory are mounted on rails and can be removed as complete units. This means that equipment can be developed and tested in the region responsible for the experiment and integrated into the space laboratory only shortly before launch. It also facilitates the quick turn-around of Spacelab which eventually would be expected to fly several times a year.

The largest version of the laboratory is equivalent to a cylinder about 17ft 6in long, with an internal diameter of about 12ft. Obviously experiments to qualify for inclusion in a Spacelab payload space conditions must be essential for their performance.

Astronomers and solar physicists have always been frustrated by the distortion, shimmering and radiation absorbing atmosphere through which they have had to make their observations. Studies of the upper atmosphere become easier if one looks at it from the outside, and the surface of the earth can be examined by a variety of means.

For some scientists and engineers the really fascinating feature of the space laboratory is the virtual absence of gravity (well below 0.001g). To the materials scientist this means that substances can be melted in suspended globules free from any contaminating contact with crucibles and crystals can be grown undisturbed by convection currents which otherwise occur in any fluid in which a temperature difference is maintained.

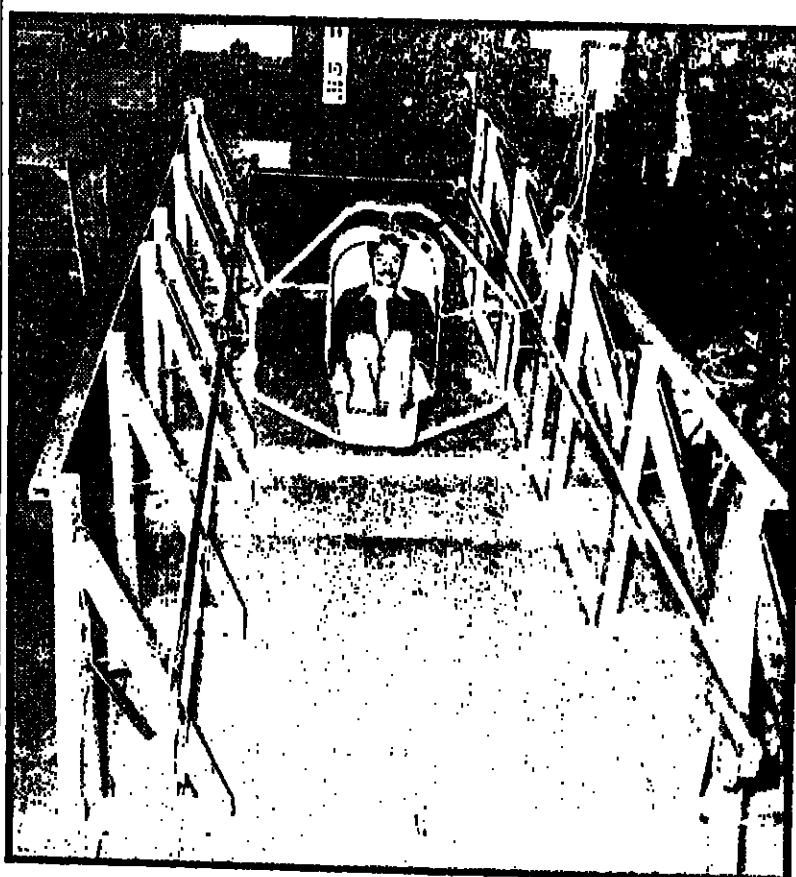
Biologists and medical scientists appear to have the double duty in that they will expect to make con-

tributions to science as well as solving some of the operational problems of maintaining man in space.

It is known that zero gravity, at least initially, produces acute physiological disturbances which reduce the efficiency of individuals exposed to it. It is important therefore in the context of a manned-space programme to investigate the mechanism of space sickness and to devise counter measures. It so happens that the organs of balance and orientation, that is the vestibular system, is certainly implicated in causing space sickness, but it is also of great scientific interest to study it without the constant bias which is normally present.

One of the most elaborate biological experiments which will almost certainly be flown on the first mission is the vestibular sled. It consists of a carriage which can carry a man in various orientations relative to the direction of motion. The carriage can be accelerated along the two rails and brought to rest again in a programmed manner thus producing known g forces. It is hoped that the organs of balance and orientation, which are recorded together with a registration of eye movements and subjective report of the effects.

Later when animal experiments become possible actual recordings will be made from the vestibular system.



The vestibular sled: a device to test what happens to the body when it reenters the gravitational field.

too much experience of blanket rules which are unworkable and seem only to apply when it suits management. Joint safety committees are now being set up under the new regulations which will have a major role in the formulating of such rules.

Technicians who work in hospitals have particular problems. In the two recent scares concerning Lassa fever and Green Monkey disease, technicians were clearly seen to be a high risk group.

In hospitals the risks are compounded by two factors. First, the cut back in expenditure has affected the ability of many hospitals to improve routine precautions and increased workloads inevitably lead to higher risks.

Secondly, hospitals as "Crown" property cannot be prosecuted under the new HASAWA. The Department of Health and Social Security claims that Area Health Authorities are "agents" of the Crown since prosecution is impossible. This has not been tested in Health and Safety Commission. This unsatisfactory situation must be changed either by law or by agreement that Area Health Authorities should adhere to orders from the Health and Safety Executive, as if they were enforceable.

The regulations on safety representatives and committees will have to be based on the trade union basis for improving conditions. ASTMS has learnt a great deal from its involvement and campaign for the control of experiments in

Other physiological effects which will be studied on the payload specialists are venous pressure, cardiac output, the ECG and the EEG, the latter particularly during sleep, and the ability to discriminate between objects of the same size and shape but of different mass.

Botanists will have the opportunity to disentangle the opposite effects of light and gravity using growth chambers in which the environment can be very closely controlled. The spectrum of light and heavy particle radiation outside the atmosphere is difficult to replicate on earth; a number of experiments will be flown in which seeds and bacteria will be exposed under conditions where the particle tracks can subsequently be reconstructed with great accuracy. On return to earth the effects of radiation damage can then be correlated with the type of particle and the target area.

I believe that it is reasonable to take advantage of the opportunity to investigate the new territory of zero gravity; the fact that the early experiments are trivial may be no more indicative of the value or extent of the new territory than the first actions of an explorer who on reaching a new continent allows the sand of the beach to run through his fingers or who shakes the trees.

The author is at the Clinical Research Centre of the Medical Research Council.

Congress sets standards for the future

Michael Binny

The future training of the technologists and scientists in America depends largely on an important Bill which has been introduced into Congress which outlines the requirements for the hundreds of laboratories and throughout the country.

The Bill is really an extension of the Clinical Laboratory Improvement Act which was passed in 1967, but never implemented. Among other things, this Act established a federally funded post-graduate training programme for laboratory workers in hospitals and throughout the country.

The lack of funds for those top-level training which were set up are now down. An attempt was made to pass a new version of the Act in 1975 and again last year, but it failed to pass. However, it contains provisions to refund these training programmes.

The Act would require laboratory workers to have a site certified clinical degree pathologist every time it is tested under the Clinical Laboratory Improvement Act. The previous Act established doctoral fellowships at universities for the training of those who wanted to become hospital and clinical laboratory scientists.

The programme can be seen as the running of a laboratory, methodology, management, and the important question of managing budgets that of hundreds of thousands of dollars.

Another university level course is Ohio State University, where a graduate programme in clinical chemistry gives the outline in basic and advanced laboratory science.

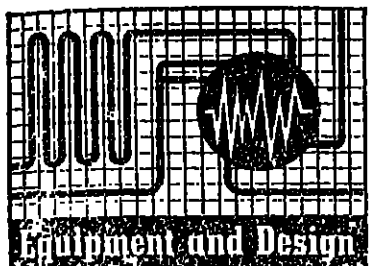
This course does not draw government fellowships. Hans Gruener, who runs the programme, said it was a people intending to work in hospital laboratories had as much knowledge as possible. Laboratory science is a very broad field and it takes only a year and a half to complete—only about one in five applicants is accepted from the colleges. The course includes work, case discussions and a range of laboratory training.

These two programmes aimed at future laboratory workers, the elite of a laboratory workforce. But the bulk of the workforce are trained in a medical laboratory with a degree in laboratory science, and a diploma in laboratory science.

Medical technology is a very broad field. It includes laboratory science, including Ohio State University, and a number of practical classes were restricted to two larger laboratories. These had been equipped for classical biological practicals, including the use of microscopes and the examination of specimens, with large wooden benches, 30in high, provided with gas, a very small number of water taps, and power outlets. These benches were changed on a wooden upstand run the length of each bench.

While these benches had perhaps been ideal for their original purpose, they were far from suitable for the varying requirements of the new courses being taught. This case of large university laboratories is being increased. Training for laboratory workers is a very important area.

Improvements will, of course, cost money but the alternative is to allow technicians to take risks and incur the cost personally in terms of health and accidents. This situation, we feel, is no longer acceptable. The author is health and safety officer of ASTMS.



Where rats can age in comfort

J. G. Phillips
G. Walker

The building requirement for a colony of aging rats is unambiguous and at first sight simple. It is a house in which a breeding stock provides a core colony of animals which live under controlled conditions to the end of their natural lives and provides at the same time a supply of animals at any selected point during their lifespan.

The Wolfson Laboratory is not only designed to meet needs of the principal investigators but also to provide a supply of animals of known age, profile and genetic constitution.

The Wolfson Laboratory for Research in Gerontology at Hull University which replaced a smaller temporary laboratory was built as a result of a £250,000 grant made by the Wolfson Foundation in 1974 to Professor John Phillips of the University of Hull and Professor Denis Lellamy of University College, Cardiff.

To this was added a University Grants Committee and University of Hull supplementation for fees, requirements—microscopy needed a bench height of 3ft in with a vibration free top and power points for the lamps. Students performed psychology experiments whilst standing and therefore required a bench height of 36in, with adequate supplies of all services. Whilst microbiological work involved both sitting and standing, needing gas and power, and a bench top with a little obstruction as possible which could be wiped down with methylene spirit to make clean working surface.

Other requirements included space for stools under the benches to give obstruction in the gangways, adequate storage space for microscopes and lamps when not in use, ease of access to services for repairs, and, most important, an increase in the number of working spaces.

Having examined manufacturers' catalogues and looked at benches in other departments it was decided that the varying needs could be met only by purpose made benches, involving some compromises. For example, bench height was fixed at 33in to suit as much as possible both standing and sitting. By slightly reducing the width of each bench it was possible to add an extra row of benches, thus increasing the number of student places from 80 to 112. All under bench space on the original benches was taken up by cupboards, with regularly spaced knee-holes for students' legs—to allow

the amalgamation of the previous departments of botany and agricultural botany, and at that time student numbers presented no immediate problem, but it was obvious that some changes would soon become necessary in the teaching laboratories. These consisted of a small physiology laboratory with space for 28 students, and a suite of two larger laboratories holding 52 and 48 students respectively.

Within three years the physiology laboratory was being used as permanent accommodation for research students, and all teaching practical classes were restricted to two larger laboratories. These had been equipped for classical biological practicals, including the use of microscopes and the examination of specimens, with large wooden benches, 30in high, provided with gas, a very small number of water taps, and power outlets. These benches were changed on a wooden upstand run the length of each bench.

While these benches had perhaps been ideal for their original purpose, they were far from suitable for the varying requirements of the new courses being taught. This case of large university laboratories is being increased. Training for laboratory workers is a very important area.

circulation requirements are kept low. The total cost of the building is £1,061 sq ft, of which 20 per cent is non-usable. The ducts and plant room, at only 10 per cent of the whole reflect the process of disciplined planning.

The five-storey building holds the research laboratories, the plant rooms and the animal house entry locks on the ground and top floors, and has an animal house on each of three intermediate floors. It is possible to isolate each animal house and gain independent access to it from the adjoining building. The large animal rooms offer flexibility in use, are labour saving, and ease the air flow problems. Several small rooms are included for special work.

The fire alarm operates at a low frequency which can be heard by staff, without disturbing the animals. The roof and walls have a low thermal conductivity mainly to prevent solar gain affecting the animal work.

The structure is heavy in order to reduce movement cracks; the construction work was scheduled to prevent retention of building moisture within the airtight animal spaces. In addition, organic material, which tends to harbour bacteria, has been avoided.

The services absorbed a third of the total building costs. The building is air-conditioned, with full filtration, heating, cooling and humidity control. The treated air is delivered at a minimum set temperature to each animal house where it receives a moist heating determined by the animal density and activity.

Over 20 air changes an hour are needed to keep the conditions right for the animals. The air pressure increases progressively from outside sea level, to workroom and to animal rooms, so that the flow of air is never towards the animals. Great care has been taken

to ensure that the condition of the air in and around the individual cages remains within the tolerable limits.

The sophistication of the air system is more than justified by the proposed density of animal occupation. The light fittings in the main animal rooms are located within the transport animal supply ducts and are controlled either manually or by local time clocks. A standby generator supplies the building in the event of mains failure.

Attention has been given to reducing the non-scientific work of the technicians, and the finishes in the building contribute an atmosphere which highlights the importance of hygiene in their work.

The cages are standard and interchangeable, are easy to service and move. They are disinfected water supply and associated cleaning equipment are provided in strategic places. Work surfaces and sinks are set clear of the walls, and cupboards clear of the floor to facilitate cleaning. Food is delivered to the building by tanker and blown into a roof-level hopper from which it is piped to each animal workstation and distributed in mobile multi-hoppers. The waste drops through pipes to a ground-level waste container. Drinking water is piped to each of the 6,000 cages.

The research laboratories are regarded as experimental workshops with surface-run services leading to the modular bench unit. This permits alterations to the layout and equipment with a minimum of disruption of the research scene changes. The adjacent offices include a link to the university's computer on which the animal records will be maintained.

Movement of scientific staff across the barrier is reduced by a closed circuit television link with the animal houses and inspection of the building by visitors and maintenance staff can be achieved in this way.

The authors are the joint director of research and the buildings officer of the Wolfson Laboratory for research in gerontology.

Aging rats are watered and ventilated.

greater flexibility of seating arrangements. It was desirable to have one side of the benches, under the bench top, as free from obstruction as possible.

The basic cross sectional shape of a bench required was therefore that of an inverted T, with the horizontal arm forming the bench top and the vertical arm the support for the top. This simple shape, together with required services, was used as the basis for specifications. The approved design was of a cantilever steel, made from square section steel tube on to which the bench top was secured, allowing cupboard units to be suspended between the uprights of the framework.

Apart from manufacture of the tubular framework and the under bench cupboards, all construction of the benches was carried out on site, which allowed the introduction of minor modifications when necessary with little consequent delay.

Each bench unit was 25ft long, and the frameworks were delivered in two sections, 10ft and 15ft long respectively, to be bolted together on site. The bench tops were made from blackboard, and covered with Forucite laminate for resistance to heat and chemicals and for ease of cleaning.

The next step was to install the service outlets. To occupy the minimum of space these were placed in four compact groups on each bench, each group serving two students, and it is here that the benches differed most radically from existing ones.

In the centre of each group was a water standard with two hot taps, having screw connections to allow the attachment of a nozzle or a suction pump. The taps delivered into an oval drip cup set into the bench top, and gas was supplied by a two-way bench cock, also held from blackboard, and covered with Forucite laminate for resistance to heat and chemicals and for ease of cleaning.

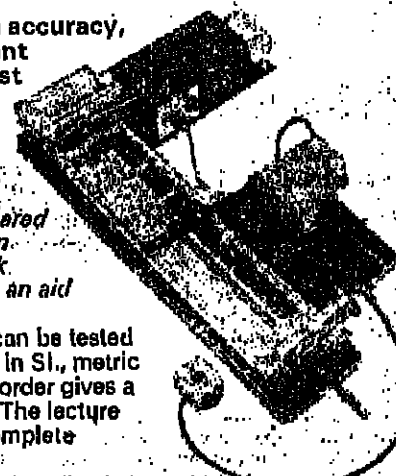
Stripping out the old benches and fitting the new, together with all the modifications to services, took only five weeks. The benches have proved most satisfactory, despite the compromises demanded by the requirements of the various courses, and in the light of six years of use it is doubtful if their design could be improved.

The author is laboratory superintendent at the School of Plant Biology, University College, North Wales.

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Venek Silhan, one of the background documents on which 'charter 77' was based

Repression is not the key to a socialist education

The Federal Assembly of the Czechoslovak Socialist Republic
Vinhohradská 1
Prague 1

Esteemed Members,
This is both a complaint and an appeal concerning a matter which I feel to be exceedingly important, and which you are undoubtedly qualified to deal with, inasmuch as you decide basic policy questions in this country, approve its laws and monitor their execution.

I am concerned about the ever-expanding system of political discrimination in education, as manifest especially in the selection and admission of children and young adults to higher types of schools, including secondary schools, certain vocational training programmes and in particular colleges. This system is based on a grossly unfair and incorrect evaluation of children and young adults and features a widespread corruption and protectionism which have reached alarming dimensions.

Experiences of recent years, both personal and of many fellow citizens have taught me that a considerable number of children and young adults have not been admitted to secondary and higher schools although their academic achievements, personal qualities and their interest in further study easily warranted a more favourable admission for further education.

After being rejected once, many went into vocational training or apprenticeship and tried again later to gain admittance to one of the country's secondary schools or colleges. Even this repeated effort, however, has in many instances been frustrated, notwithstanding the fact that the majority of the people involved receive positive evaluations at their workplace and are recommended for further study. Many have sought to be admitted three or even four times, only to be rejected over and over again, under various pretexts.

The personal qualities of the majority of these young people, their demonstrated academic and work results in lower education, their demonstrable successes in entrance examinations indicates that the continual rejections they encounter are motivated by reasons which are extraneous to their own merits and which they cannot influence or surmount by their own personal efforts.

Further, the number of cases in these cases exceeds the number of places that only individual oversight errors on the part of school admission administration cause. Right of the appropriate process at higher educational organs, including the Ministry of Education and the Ministry of Labour, further corroborates this view.

I have been studying the admission system for several years now, and have been mentioning individual cases as well. I have reached the conclusion that the perennially rejected young people constitute a well-defined group, into which are included those who are not to be branded their parents or other close relatives as right-wing

opportunists, revisionists, and socialists or indeed, counter-revolutionaries. In the early seventies these relatives were expelled or excluded from the Communist Party; some had never even been Communist Party members. Their attitude towards the events of 1968-69 approximated that of expelled and excluded CP members. It is well known that since the years of the so-called consolidation and normalization, those people have been discriminated against in their life, work and daily existence, on account of their political attitudes and opinions. This situation continues.

However, certain elements in society have been satisfied with discriminating against this considerable number of people in their life, work and daily existence, or perhaps they feel it has not led to anticipated results. Therefore, more effective and harsher methods have been employed. Civil and labour discrimination has been extended to the children of these people, and is employed especially in the area of their further education and professional training, that is in an area affecting their future livelihood.

All this is happening no less than seven years after inaugurating the so-called consolidation and normalization policy. Young people who today bear the brunt of discrimination in college admission were only ten or eleven years old in 1968. Those striving to be admitted to secondary schools were only seven or eight.

We are witnessing an administrative procedure which employs politically motivated penalties in humanely the most inhumane manner, that is in parent-child relations, in an effort to pressure parents, to force them into submission and to manipulate the will according to the intentions of political power. All this adversely affects family relationships, imposes upon people norms of pliant, conformist or even groveling behaviour, and thus corrupts the social and individual character of our people, especially of our youth.

Our entire national heritage and culture indicates that whenever state or political power is used to discriminate through their children, or exerted upon people cannot influence or surmount by their own personal efforts.

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intellectual talents and abilities in a flourishing social and individual culture, and turns instead into an instrument for a career, for personal material advancement and for attaining a position of power. This is essentially a petty-bourgeois rather than a socialist approach to education.

Repeated efforts, of parents in particular, to criticize the harmful situation have been stonewalled. Assorted institutions and responsible persons have received hundreds, indeed thousands of complaints which have been answered either not at all or evasively. Nevertheless, it means that state and political authorities are informed about the situation, and are unwilling to effectively countermeasure these phenomena. Matters are left to take care of themselves, or to fate.

The policy of discrimination in education is not an accidental or isolated phenomenon in our public life. It is a component of the overall administrative methods employed in recent years. These policies can be traced only at the expense of violating basic political and civil freedoms and rights proclaimed and guaranteed particularly in the Czechoslovak constitution, but also in international agreements which Czechoslovakia has voluntarily joined.

The process of admitting children and young adults to secondary and higher schools in Czechoslovakia is discriminatory, in terms of the various international agreements and declarations to which Czechoslovakia has voluntarily joined. I have particularly in mind the Declaration of the Rights of Children, adopted by the UN General Assembly in its resolution 1385 (XIV) of November 20 1959, which Czechoslovakia voted in favour of, and the Convention for the Prevention of Discrimination against Children, adopted at the 19th General Conference of UNESCO on December 14 1960, which Czechoslovakia ratified by a letter from its president dated July 1 1963, deposited with the UNESCO General Secretary.

In ratifying this convention, Czechoslovakia not only denounced any activity that would discriminate against every citizen to education, and equal educational opportunities for all, but also reaffirmed the right of every child to education, and equal educational opportunities for all, and also stated that the purpose of education is to develop the individual and to contribute to the well-being of society. It is my understanding that the constitution guarantees these rights categorically, without exceptions or limitations to the right to education to be they for race, class, wealth, religion, social or political reasons.

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Professor Venek Silhan

It is a natural duty of our people — of people in other countries — to transmit these values to the next generation and to inspire it to further expand and enrich them. It is the duty of every good government and of public institutions sensitively and capably to regulate this transmittal of values across generations. Every young person has the right to education. The fact that children and young adults should have the right to education is a natural development. Similarly, Article 24 stipulates that "all citizens shall have the right to education."

Where the Czechoslovak constitution concerns civil rights, including the right to education, this basic law of the country is being systematically violated by institutions and persons. The constitution formulates civil rights directly and indirectly: Article 26, paragraph 3, declares that society shall ensure all children and young adults every opportunity for full physical and mental development. Similarly, Article 24 stipulates that "all citizens shall have the right to education."

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Come back Machiavelli all is forgiven

David Dickson talks to Duncan Davies, the new chief scientist at the Department of Industry



Dr Duncan Davies: "Technology pull", rather than "science push"

It is a neat coincidence that the centenary year of the Royal Institute of Chemistry started on the appointment to two key posts in science policy-making in the chemical industry.

Dr Duncan Davies moves today from ICI to take over the position of chief scientist at the Department of Industry from Sir Iwan Maddock. He will soon find opposite him as chairman of the Science Research Council Professor Geoffrey Allen, a past ICI colleague and now professor of polymer science at Imperial College, London.

The timing of the two appointments may be accidental. But the chemical backgrounds of both Dr Davies and Professor Allen has a considerable significance, not only because it signals the end of an era in British science policy-making which has tended to be dominated by physicists.

Nor does the significance lie merely in the fact that both men have considerable experience of industrial research. More important is the specific form of the relationship between scientific research and its technical application that characterizes the chemical industry.

In crude terms, this relationship can be described as "technology pull" rather than "science push". And the two appointments seem to confirm that a significant change can be expected in the form taken by science policy over the next few years.

Dr Davies represents this approach at its most sophisticated. As general manager of research at ICI he has been responsible for the scientific activities of one of the largest chemical firms in the world. It is also among the most profitable, recently announcing a record profit for 1976 of £540m before tax.

He has been an ICI man since he joined the company's dyestuffs division from Trinity College, Oxford, in 1945, rising rapidly to become first director of ICI's Petrochemical and Polymer Laboratory in 1962 (at which Professor Allen held a part-time appointment from 1963-75).

When Dr Davies speaks of the role of science in society, he therefore does so from a feeling of experience, up against what has been called the "coal-face" of industry, rather than from the relative distance of the university laboratory.

budget. It also reflects the much greater collaboration now required between science and industry, Dr Davies says.

"In the 1920s and the 1930s, there were a large number of cases in which doing detached science led to socially useful results. There was very considerable alliance between university and industrial laboratories, but little more was needed.

"In the late 1940s and early 1950s, the new science-based products had to prove themselves competitively, and the industrial component of R & D had to become more market-oriented.

This was the research climate that Dr Davies encountered when he entered ICI. He points out, for example, that from the nineteenth century onwards, the dyestuffs industry had been one of the first to use scientific methods in what had previously been a craft industry.

Today, the shape of social demand is more complex than 30 years ago. We have a situation in which the needs of the market are beginning to be subservient to the availability of resources, and the general characteristics of a resource economy.

"This requires ensuring that there are the necessary resources available at the right price, and that people are being efficient in their use. Planning mechanisms previously developed at the level of the firm must therefore be extended to planning at the level of society."

Such developments have important implications for education, Dr Davies says. In particular, those trained in scientific and technological disciplines will find that by the time they are in their mid-30s, more than half of their job will involve understanding social and political issues.

"Higher education still tends to talk about science in terms of the concepts of the 1920s and the 1930s; what we should be talking about is technology and science together, relating these intellectually to our understanding of social behaviour."

Is shortage of engineers a self-serving myth?

It seems generally accepted that one of the most pressing needs of this country is for more engineers and scientists. Lord Cromwell-Hunt, then Minister of State for Higher Education, sparked off the current outcry in 1973 by delivering a series of speeches in which he claimed that more engineers and scientists were required if the country's economy was to recover and advance.

Last year, in his Oxford speech, Prime Minister James Callaghan, who had just visited the science and engineering faculties. Indeed, he regarded this shortfall as so important to the economic well-being of the nation that he charged the Secretary of State to find ways of filling it.

Why do educationists, politicians and representatives of the Confederation of British Industry and the engineering institutions all agree that we need more scientists and engineers? It may either be because the manpower forecasters have told them so, or because they are themselves practising statisticians.

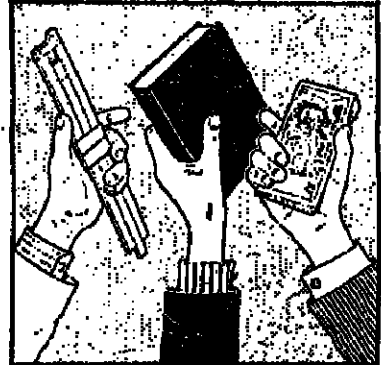
In the early 1960s, a period when the country was also said to need more scientists, the people responsible for making such forecasts were easy to identify. They were the members of the manpower committees under Zuckerman and Jackson. It is not so easy to identify the sources of the forecasts now, for they are rarely cited. However, it may well be that the Prime Minister, who takes a very lively interest in the National Economic Development Council (NEDC), was impressed by one of its recent studies, *Shortage of Qualified Engineers*, published in October 1975.

The NEDC pamphlet considered that the number of people coming out of higher education with engineering qualifications in 1975 will continue to be, inadequate to industrial "need". The sources for this belief turn out to be the "employers, university departments and professional institutes with which the NEDC discussed the problem."

The employers form the most important source of information. However, the employer-opinion method for establishing shortages of engineering graduates, as used by the NEDC, is flawed. The NEDC pamphlet makes no mention of these minimum requirements.

However, it is not difficult to understand if, a priori, grounds, why the employers might claim a future "need". The greater the number of engineering graduates, the cheaper are engineers to firms — "cheaper" because the government is now paying for much of the supply of graduates, rising market forces will tend to depress their wages relative to other groups.

What of the professional institutes? Their concern for shortages of engineers has been rising relative to other groups of workers during the period or periods of "shortage". The evidence of the last decade is that engineering salaries have been falling, rather than rising, relative to other groups. And this in fact suggests a surplus of engineers, rather than a shortage. (It may also explain why 30,000 places, remaining unfilled, in science and engineering faculties remain unfilled.)



Engineering and Industry

From all to postgraduate level (Mace and Taylor, "The Demand for Engineers in British Industry", *British Journal of Industrial Relations*, 1975).

The principal problem with the NEDC approach to shortage, as with all earlier forecasting attempts, is that it ignores economic realities. Not only does it ignore the possibility of substitution between different categories of workers, but it also ignores relative earnings, which will influence the numbers of qualified workers that are used in production.

"Economists" define a "shortage" as a situation in which the earnings of one category of workers are rising, relative to the earnings of another category. If we accept this definition of shortage, we would expect to find that the earnings of engineers had been rising relative to other groups of workers during the period or periods of "shortage".

The evidence of the last decade is that engineering salaries have been falling, rather than rising, relative to other groups. And this in fact suggests a surplus of engineers, rather than a shortage. (It may also explain why 30,000 places, remaining unfilled, in science and engineering faculties remain unfilled.)

To establish whether a "need" or "shortage" exists, the relationship between qualifications, jobs and output must be understood. There is no evidence that the incessant calls for more engineers and scientists to meet the economic "needs" of this country represent anything other than special pleading by interested parties, or are the result of attempts to make forecasts on the basis of totally discredited methods.

The author is lecturer in the economics of education at the Institute of Education, University of London.

Adrian Taylor and Larry Grant reply to A. W. B. Simpson's article (THESE March 4) on the closure of Kent University's law clinic 'We can see the broken eggs; now show us the omelette'

The law clinic at Kent University was opened in November, 1973. Between that date and December 1976, when the Senate of the university, acting on the initiative of Professor Brian Simpson, decided to close the clinic, over 1,300 clients had been advised and represented.

A handful of staff—most of whose work was entirely voluntary—assisted by over 40 students annually undertook work relating to landlord and tenant, employment, family, social security, consumer, mental health, immigration, and criminal cases.

This work involved appearances before a variety of courts and tribunals, and it is not secret that the clinic also represented clients at St Augustine's Hospital and at the Tyndale Schools Inquiries, and that on a number of occasions it has taken the local city council to court. This work was based on the concept of practice which involves a conscious attempt to relate the practice of law to its theory.

Professor Simpson puts it, "extremely expensive". Certainly it is more expensive than a law-based course, but less so than laboratory work, whose extra costs are funded by fees from local authorities. Professor Simpson has never given any reasons for his refusal to seek funds in this manner.

It is, of course, essential to the competitive instinct of members of faculty board by suggesting that the clinic has had an unfair share of the cake. To date this university's contribution has involved paying the salary of a secretary, half the cost of a supervisor over one year, accommodation and equipment at minimal standards, and £2,500 annually to cover the costs of a widening range of clinical procedures.

But then we are told to remember the economic situation. This would be more impressive if the university had a defensible system of priorities. To plead poverty with respect to policy, given that a thin disguise for a political decision, is certainly the case that negotiations with the Lord Chancellor's department concerning the refusal of the Society to grant waivers had been protracted and quite inconclusive up to the moment when they were summarily terminated as a direct consequence of the decision to close the clinic.

a device which would complement the educational function it would and to remove it from the campus even at the cost of heavy additional expenditure.

It cannot be thought that this objectionable matter is a denial in the light of Professor Simpson's settled refusal to attend to amendments proposed by the local community representatives, avoiding the possibility of any case-work either to the law or local interests, and the high educational value and financial stability of the clinic.

Professor Simpson bears a heavy responsibility not only for his part in the closing of the clinic, but also for the proposals which he has put forward for its replacement. His motivation may be judged from his mode of proceeding and from the content of his proposals.

Dr Duncan Davies: "Technology pull", rather than "science push"

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The Times Higher Education Supplement (London) Room 641 National Press Building Washington DC
Tel: (202) 638 6765

Call for new economics which puts people first

The only answer to the present and predicted depletion of developed human resources was a new economics which took human potential as its starting point, Mr Willard Wirtz, a former secretary of labour in the Kennedy and Johnson cabinets, told a general session on economics and a politics that put people in the first place instead of something else on down the line," he said. This meant recognizing that there was a limitless amount that needed doing in America and in the world, but while some natural resources were in critically short supply, the human resource was boundless.

Developing a theme that has had considerable impact since the publication of his book *The Brainless Resource*, Mr Wirtz said the new economics would start by making the fullest use of talents inside people instead of starting from the most profitable exploitation and misuse of elements inside the thin crust of the planet. This would mean a rethinking by all major companies of the comparative drain on natural resources and their use of educated human resources.

"Such an economics would recognize fully the necessity of a system which is self-supporting and which provides for and depends on growth. But the notion of growth would include different elements from those reflected in the gross national product in history or the world as it would centre rather on those elements of growth that would come more closely with our human purposes and our underlying ideals as a civilization."

It would emphasize services instead of products. The gross national product would be renamed the net national product, and nothing would be excluded from consideration just because women used to do such things as housework and raising children without pay. Such a new economics would also involve rethinking of work schedules; the traditional pattern of eight hours a day, five days a week, between the ages of 25 and 65 would have to be questioned, Mr Wirtz said. Life's three "ridiculous time traps" for education, work, and leisure, he said, would have to be changed. Sixteen or more years of education at one long, uninterrupted sitting was not the best answer for most young people who were following this course today.

All this was becoming increasingly urgent because it was clear that the present system could not continue. However much the eco-

Time for understanding

nomist would encourage, society to put more value on time and cease measuring people's worth solely in terms of "productive" work, Dr Kreppe United States secretary of commerce and older secretary of the Duke University, told the conference.

There was a strong tendency to equate human worth with earnings, he said. As a result those who did not work for pay—the young and the retired—were considered valueless. Investment was made in young people in the form of education because of their future productive powers but there was little investment in the elderly because there was no return on this. Even the care of the elderly and sick was now left to paid workers, because others found it a waste of their time.

"The grossly underestimated the same of quality to make up individual worth," Dr Kreppe said. "What was needed was a new attitude to time. Everyone tried to save time but to what end? Leisure could

Our correspondent reports from the annual meeting of the American Association for Higher Education, held in Chicago last week

The overeducated American

The phrase "the overeducated American" has entered the common vocabulary since it was first used a few years ago to describe the phenomenon of too many university graduates for the number of depressed jobs available.

Argument has switched around the facts: How many graduates can the economy absorb? and around the implications: Is the purpose of education solely to train people to get high-status jobs? In the past year a new dimension has been added to the debate with the contention that the economic return to an individual who has received higher education is falling fast.

The debate is of critical importance to new judgments, many of whom have been made in the past few years. Higher education as a whole has been reluctant even to consider whether fewer people should go to college. The provision of suitable jobs is a concern of industry, say the academics, industry in turn has tended to shift off responsibility for any mismatch between qualifications and openings. It has been a dialogue of the deaf.

Last week saw one of the most important attempts to come to grips with the problem. The annual meeting in Chicago of the American Association for Higher Education, one of the largest gatherings of employers, administrators and researchers in all sectors of higher education, spent three days debating the relationship between education and work. Significantly, the theme of the conference was "Help Wanted."

The conference raised far more questions than it answered. It also was clear that the problem is not temporary, nor amenable to easy solutions. A number of speakers, including Mr E. F. Schumacher, secretary of the International Technology Development Group in London—and better known in the United States as author of the best-seller *Small is Beautiful*—suggested that education had to re-examine its philosophical basis on which the system had been built up since the 1920s by three decades. People had to ask the basic questions:

What work is 'good'—what work is 'bad'?

The question of "good work" and education for good work could not be discussed without asking "What is work?" and "What is the purpose of his life?" said Mr E. F. Schumacher, the keynote speaker at the conference and author of the influential book *Small is Beautiful*.

"The question had to be answered, he said. There had to be changes in the definition and quality of work. But there was no satisfactory answer except as America worked its way back to answers to the S. Eliot's more searching questions: "Where is the wisdom we have lost in information?" "Where is the understanding we have lost in knowledge?" "Where is the life we have lost in living?"

To these, Mr Wirtz added another: "Where is the limitless human prospect we have lost in too narrow endeavour?"

Education for good work was quite impossible. Good work could not be distinguished from bad work, if human life on earth had no meaning or purpose.

But the metaphysics of the great civilizations did offer guidance. Man's greatest need was a spiritual being, was primarily and inescapably concerned with value as a social being. It was concerned with other people and with other sentient creatures; as a person it was concerned with developing itself.

Schumacher suggested three things that education ought to prepare people for three things: to act as spiritual beings, in accordance with their moral impulses; to act as service to their fellows; and to act as persons of power and responsibility, that is to say, to be creatively engaged, developing the gifts that have been laid into them.

These, he said, were the human beings' fundamental needs. In their fulfilment lay happiness; in their unfulfilment lay frustration and unhappiness.



Mr E. F. Schumacher

Mark Webster reports on the dilemma facing French universities

More cash or fewer classes

The financial position of a number of French universities is looking increasingly bleak. If the secretary of state for universities does not agree to extra cash for the ailing institutions, the authorities say they will either end the year with massive debts or have to start closing classes and making staff redundant.

Paris is rather worse off than provincial universities and Paris VII alone says it would need another 10m francs on top of its budget of 31.9m francs in order to carry on normally. Paris VII, the second biggest French university with 1,650 teaching staff, has already borrowed 3m francs from its capital reserves and used 1.7m francs of its research funds to cover everyday running expenses.

The president of the university, M Yve Le Corre, says there has been a 20 per cent cut in the cost of central departments but that the 200 research laboratories and the six independent buildings which comprise the university are extremely expensive to maintain. The state replies simply that it does not consider the university is short of money but that it needs to revise the way it spends its income.

Similarly Paris VIII-Vincennes claims it will have to make overall cuts of 40 per cent in the number of teaching hours and 33 per cent more money. Of the 33,000 students more than one-third are foreigners and they are facing cuts of up to 80 per cent in courses in such disciplines as urban studies.

One solution which has been advanced and bitterly opposed by the university is its transfer to the suburbs, but its troubles stem from the beginning of the year when the secretary of state slashed the number of supplementary hours paid by the state—90,000 to 70,000. The crisis in the universities has been building up ever since Mme Alice Saunier-Seïté announced her controversial budget designed to force universities to adopt a new internal policy by August 1st. At that time the government said that resources were available.

The budget shows an increase of 15 per cent on the previous year, which was largely absorbed by the rise in salaries. What extra money there was went on renovating build-

Ex-London dean deals parting shot to medics

The dean of the faculty of medicine at Adelaide University opened a furious debate about the medical school's standards with a strongly worded criticism only a few days before he returns to Britain.

Professor Philip Rhodes, formerly dean of St Thomas's Hospital Medical School in London, resigned his Adelaide job after only two years of a five-year appointment. He will return to Britain at the end of this month.

In a confidential report to heads of medical departments which was leaked to the news media by each of them, Professor Rhodes claims that the medical school is gripped by factions with no concept of loyalty to the university community. He says many staff produce poor research and inadequate teaching efforts. He lays the blame for this on no proper work ethic.

He says the methods of encouraging staff to do their share of work were untested, even when it was manifest that they were not carrying out their jobs responsibly.

Professor Rhodes' resignation comes almost exactly five years after hundreds of Adelaide medical students signed a petition to demand their contribution towards the intolerable state of medical education in South Australia.

His memorandum to his fellow academics contained the following detailed criticisms: the medical school had existed for nearly a hundred years but had contributed nothing of any great importance; any South Australian doctors who had achieved anything, such as Lord Storey and Sir Hugh Cairns, had made their contribution elsewhere, probably because Adelaide's intellectual atmosphere stifled development; there was little evidence of cooperation or teamwork in the university's committees and administration; an unworkable system of usually subjected to unhelpful criticism; and legalistic practices dominated all the university bodies.

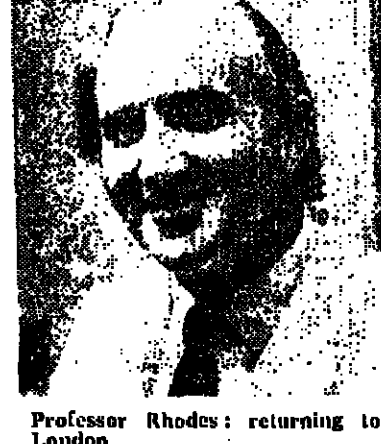
Finally he hit at the tendency of students "to catch the spirit of 'dilettante' so that they wasted any effort to improve standards. The

students' representations were all concerned with decreasing the workload or increasing their holidays.

Adelaide medical students have not taken kindly to Professor Rhodes' remarks, though some of them agree with his criticism of the university staff and administration.

Letters in the Adelaide newspapers signed by various students complain that the dean had failed to understand the increased demand on medical students in recent years. What the students wanted, they say, was merely to prevent any additional workload.

Professor Rhodes' report also caused a stir at a higher level in the university. The university council is reported to have discussed the controversial report in camera, but so far has issued no official comment on its contents. The vice-chancellor, Professor D. R. Stranks, said the report would be the basis for further discussions in the normal course of events by individual departments and the faculty as a whole.



Professor Rhodes: returning to London

New pay deal for junior staff ends two-year dispute

Italy One of the causes for discontent in Italian universities was tackled this week when the Education Minister, Franco Maria Malfatti, and representatives of the three main trade union federations agreed on pay increases, to give greater security and better prospects for university staff.

The agreement will include all 3,700 full-time professors, a certain number of supernumerary professors, and a further 5,000 to be appointed after competitive examinations. Under the agreement the professors will be obliged to be present in the universities at least four days a week and teach or attend to their students for a minimum of 12 hours a week.

The new agreement goes a long way towards relieving the plight of many thousands of young assistants who have had to suffer extreme hardship in order to get their feet on the first rungs of the academic ladder. They have often had to take over most of the burden of teaching from professors too busy with their affairs to attend to their students. But their reward has been a pittance—some complain they get only the equivalent of £100 a month—in addition, for survival even in a small Italian town.

Many of these assistants and other junior members of the teaching staff have been active in the university protests of the past months. Under the agreement many assistants will be taken on as associate professors, the lower of two categories of professors to be instituted with the forthcoming university reform. No solution has yet been found for the large number of junior staff who are not classified as assistants. But junior staff are expected to be pleased by the practice of 6,500

Big increase in overseas students

West Germany The world of work had not had a "new paradigm" in colleges and universities, said the commissioner of education at the conference.

Education had been recognizing the importance of work in our lives and our values in what came to be known as "liberal education." The liberal attitudes to work do they relate to the way a person has to make his way in the world? "Therefore I am?"

In spite of the liberal attitude, the study of the liberal arts, rush to vocational colleges, and the rest were registered there were part of the liberal tradition. Liberal education courses could not be placed in traditional colleges and vocational education.

Dr Boyer said work was placed in three areas of curriculum: communications, and the arts. The liberal arts curriculum is one that made before and now is being re-examined. An upper third of the curriculum is now being re-examined. Before the arts are admitted they have to prove that they possess an adequate knowledge of German; otherwise they must first attend special courses in German for foreign students.

No improvement in graduate unemployment figures

Sweden Hopes of a further improvement in graduate unemployment have been dashed with the release of figures showing joblessness six months after graduation to have risen drastically in the year.

The latest survey by the Science and Humanities Research Council—of those graduating in autumn 1975—reveals that almost one in six students seeking work were still without jobs last spring compared to slightly more than one in 11 a year earlier.

The figures are the worst since the surveys were begun in 1972 and show that the jobs crisis, instead of easing as predicted (THESE, September 24, 1976), has worsened to affect science graduates, and those with master's qualifications.

Altogether 59 per cent of graduates sought work, against 62 per cent the previous year, while 29 per cent continued studies and 10 per cent began their military service. Of the 1,058 graduates seeking work, 16 per cent failed to get jobs compared with 9.3 per cent in spring 1975.

Republic of Ireland Exams threatened by strike

6,000 students due to take their exams, is over whether or not sitting and marking exams is part of the normal duties of the teachers in the colleges.

The Department of Education originally intended that it did, but has now agreed to pay for marking the papers at the same rate as is paid to university lecturers—75p per paper, with compensation added for overtime.

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التعليم في العراق

How many students in 2000?

Universities and polytechnics are nearing the top of the demographic big-dipper. At present there are estimated to be 8.0,000 18-year-olds in the United Kingdom. In five years their number will reach a peak of 927,000—and then the stomach-churning descent back to the present level by 1989 and further to not much more than 600,000 in 1995. That part is certain. The babies are already born. What happens next can only be described in the imprecise language of projections, but most people expect a modest recovery in the birth rate which will produce a total of school leavers in the year 2000 very similar to the number today.

Two interpretations of this oscillating and even alarming demographic pattern are possible. The first emphasises the contrast between the peak in the early 1980s and the trough in the early 1990s and can be summed up in a simple phrase: what is happening to the colleges of education today will happen to the rest of higher education tomorrow. This then gives rise to exaggerated fears that, as in the case of the colleges, some polytechnics and universities may even have to be closed (or for adherents of the *Black Paper* line to eager anticipation of the time when the over-blown institutions of the Robbinsian expansion are cut down to size). Such fears are exaggerated and such anticipation likely to be disappointed because the colleges of education are a special case. The demographic decline hit them not only first—because their graduates are trained to teach school children—but also more severely because for the colleges the connection between birthrate and enrolment is at the output rather than the input end.

The second interpretation places less emphasis on the peaks and troughs and more on the overall trend towards a steadily shrinking cohort of 18-year-olds at the end of the century. There are several reasons for preferring this less catastrophic but still gloomy interpretation. A working group established by the Conference of University Administrators in its carefully laid out detailed report published today (page 9). First, a comparatively modest increase in the proportion of the age group going on to higher education could help to compensate for the inevitable decline in the size of the total age group. Second, this demographic decline has been less precipitous than managerial and professional families which still provide a disproportionate share of the recruits to universities and polytechnics. Third, the proportion of women and older students has been steadily rising in the past 10 years.

Yet the inevitable influence of the demographic decline of the past 10 years on the fortunes of higher education can hardly be exaggerated. This vast but unexplained and unexplainable phenomenon has brought the Robbins age to a final close—almost right on

Restoring confidence

The recurrent grant to universities next year of £552m (an effective 1.5% increase on £543m) when the increased income from tuition fees is added) is the best that could be hoped for in the present economic condition of the country. A cut of even 1 per cent, of course, is still a cut—but at least it is of manageable proportions. The universities as a whole will receive about £6m less than they needed to maintain existing standards which works out at less than £140,000 on average per university. The grant also seems to be based on realistic estimates of the level of future pay increases and the rate of inflation. These assumptions seem to be of a 7 per cent increase in salaries and a 15 per cent rate of inflation. This realism is important because the grant is a cash limit. Whether the universities are to be paid more or less depends on how accurate these assumptions turn out to be. But even here there seems to be a faint glimmer of hope. The Government's fiscal approach, Mrs Williams in a rather opaque phrase did say she was "substantially higher" than those implied in the cash limit, then three years ago would be prepared to review the position.

The third gain by the universities is the reintroduction of a more distant planning horizon. As well as announcing the grant for the coming year, Mrs Williams announced provisional figures for the following three years up to 1980-81. It may not seem much but it does help universities to be more confident about the likely pattern of income they will receive in the next few years. It is also a useful precedent on which a restored quinquennial system of finance could be based.

Czechoslovak discrimination

Sir,—Politically motivated discrimination in education in Czechoslovakia is not confined to entry into secondary schools and universities (*THES*, March 25), but operates in several ways in the case of graduates wishing to proceed to a doctorate.

First, there is the requirement that an admission of a doctoral thesis all candidates must pass a demanding examination in political theory, irrespective of his or her academic discipline. This is a cause of considerable anxiety to many students who have little or no expertise in the field, and undoubtedly deters some from undertaking a research degree at all.

Secondly, there is an unwritten requirement that the content of the thesis should reflect a certain ideology, however irrelevant this may be to the subject under investigation. When I visited Czechoslovakia last autumn to lecture to teachers of English in tertiary education, I asked a particularly gifted young graduate in English literature why she had not chosen to go on to a doctorate. She replied that she was not "clever enough"—that is not clever enough to subordinate her critical insights to the ideological interpretations demanded by the prevailing school of criticism, masquerading under the title of social realism.

Thirdly, it is virtually impossible for a practising teacher to submit a

Frazer's failings

Sir,—While I agree with Mr Ackerman (*THES*, March 25) that James Frazer's work is not a "total waste of time" most evident to me when I read his book *The Golden Bough* (Oxford, 1966). His basic aim was to analyse Egyptian texts in their own right, and not to make facile comparisons between far-distant related cults, and to approach to religious and philosophical in general.

I would venture to add that I do not find his work of value. Thus the line have mentioned is not vitiated since there are no authentic Egyptian texts relevant to the fact of the matter. I am glad to see that even if now excluded by anthropologists, often today under a new fashionable cloak of piety.

Yours faithfully,
J. GWYN GRIFFITHS,
Professor of Classics and Egyptology,
University of Wales.

Education and industry

Sir,—I found it ironic to read your article (*THES*, March 25) on education and industry. It is surprising that in the very same year that Hegel died, and in the same place: Berlin, 1831. Aristotle had very much the reputation of being—in contrast to Plato—the great empiricist among philosophers. It was certainly to Aristotle rather than to Hegel or Plato that a student of philosophy would turn for the philosophical foundations of empirical scientific inquiry.

Bearing all this in mind, it is small wonder that Marx, studying philosophy at the University of Berlin from 1837 to 1841, should have viewed himself in the works of the founder of the scientific tradition.

Marx concentrated especially on Aristotle's philosophy of nature and on his scientific analyses. He studied not only the *Metaphysics* but also the *Physics*, *On the Heavens*, *On Generation and Decay*, *On the Generation of Animals*. These writings taken together introduced Marx, as early as 1839 and 1840, to Aristotle's method, and to Aristotle's concept of form.

Let us look a little more closely at these. Aristotle studied a great many different kinds of living beings. He examined numerous species of plant, fish and animal including the human animal. He looked upon these different parts as so many different forms of a single living substance.

Aristotle thought of the whole of nature as a single substance which differentiates itself; nature generates its own different forms. And he believed that in order to get to know the whole of nature in general, one must study the particular forms it generates.

These particular forms had, in Aristotle's view, the immense advantage of being observable; they could be observed and even dissected. And by observing the particular whole, one could build up a knowledge of the whole of nature in general.

Not only could one build up knowledge, by moving from the particular form to the general; one had to do so. If one wanted to know the general, namely nature, one had to investigate the particular, because one could not observe the whole of nature as such.

Western Marxism

Sir—I was stimulated by Dr Lubasz's extremely interesting and important review (*THES*, February 18) of Perry Anderson's recent book on Western Marxism to write (*THES*, March 4) to you agreeing from a different point of view that there was something of an intellectual contradiction between the advocacy of certain forms of Western Marxist philosophical analysis in the journal which Anderson edits and his dismissal of them in his book.

Unfortunately in making this point, I did Dr Lubasz himself an injustice by implying that he was wrong to dismiss Anderson's book and then agree that it involved a devastating critique of the Western Marxist tradition. Dr Lubasz points out to me rightly that this case against the substance of Anderson's argument founding him deficient and highly selective in his treatment of the Western Marxist tradition.

I should like to take this opportunity of correcting the impression which I gave and to express the hope that now that there seems to be a general intention to turn to modern Western Marxism beyond philosophical sterility we may now turn to the study of other aspects of the tradition.

Yours faithfully,
JOHN REX,
History department,
Katholieke Universiteit,
Leuven.

NUS and protest

Sir,—It was to be expected that the recent national scale of student protest action over tuition fee increases would revitalize attempts to explain, analyse and categorize the phenomenon in a somewhat superficial manner. Professor Dahrén-dorf, at an admittedly tentative level, attempts an explanation and comparison of the student troubles of 1968 and 1977 (*THES*, March 11). Nevertheless, he ignores certain crucial aspects of student movement developments essential to his understanding in this area.

First, it tends to cloud the issue to think of student troubles of 1977 and 1968 as if there were eight years of "calm" in between. Throughout the 1970s we have seen vigorous campaigns led by the National Union of Students on student union autonomy, student and teacher unemployment, all of which involved a variety of tactics, including occupation.

Second, the NUS was to a large extent bypassed by the sporadic, often unrelated events at particular colleges in 1968. The actions of that year, however, have been in response to the call of the NUS executive and have all been focused on the same issue: NUS coordination and leadership of the protest action.

Institutionalized and politicized national union

Certainly within the student movement there is left a strong need to "defend" post-school education. The danger, however, in recent months is that the subsequent action may be that of the irrational response of the frightened, thereby devaluing the nature of student protest action in the eyes of the public. The role of the NUS in representing the concerns of students through adoption of strategic tactics to oppose the government measures is not overlooked.

Yours faithfully,
RICHARD HOLLEN,
Postgraduate research student,
Department of Sociology,
University of Exeter.

Law studies

Sir,—I find myself in complete agreement with Professor McAnville's exhortation that an entirely new approach to legal education (*THES*, March 25). At a time when the legal profession is under the public microscope, it would seem appropriate to re-examine the role and structure of legal education.

While academic standards are, in general, being maintained, the law student is potentially ill-prepared to handle the considerable problems raised by the working of the law in contemporary society. Legal education must break out of its traditional mould, abolitionist shell and which it purports to fulfil. The law student must be encouraged to adopt a more critical and functional approach, developing an awareness of the law's role in adjusting social problems and tensions. The insular and introspective basis must be replaced by a more responsive and interdisciplinary foundation.

Also, the likelihood of such an approach being adopted is slight. Such suggestions are met with the claim, exemplified by Mr Gordon Barling, that there is sufficient "flexibility" in the present structure. However, this is to miss the whole point of the suggested reforms. There is a need for fundamental changes and not just cosmetic iterations. A fresh environment requires stimulation and redirection of the study of law can occur.

In advocating a more vital and vibrant form for legal education, the call of Rescue Point for "social control" remains as true, yet as unrealized as ever.

Yours sincerely,
ALLAN HUTCHINSON,
Legal studies department,
Trent Polytechnic,
Nottingham.

The Aristotelian dimension in Marx

In the first volume of what is surely his greatest work, *Capital*, Marx pays tribute to two forerunners, Hegel and Aristotle. Marx speaks of Hegel as the great thinker who had been the first to formulate dialectic clearly and cogently, even though in the process he had managed to stand it on its head. Of Aristotle, Marx speaks as the great investigator who had been the first to analyze certain economic forms, as he had been the first to analyze so many other forms, natural, social and logical.

The tribute to Hegel is tribute to a powerful speculative thinker; the tribute to Aristotle, however, is tribute to a scientist, indeed to the founder of the whole tradition of scientific investigation.

Now in paying tribute, Marx was, of course, also acknowledging debt. His debt to Hegel is widely recognized, indeed my view it tends to be overestimated as well as misunderstood. Marx's debt to Aristotle, on the other hand, has barely been noticed. And yet what Marx learned from Aristotle's writings was to be of absolutely fundamental importance to his own work.

For like Aristotle, Marx was all his life an investigator of forms. Putting it very roughly, one might say that Marx learned from Aristotle's biological studies how one examines living forms. And he adapted Aristotle's method of studying natural forms to the investigation of social forms, to the study of society.

It may not seem surprising that someone trying to work scientifically on politics and society in the 1830s and 1840s should have looked so heavily on an Aristotelian method which, at least in physics and astronomy, had long since been discredited and replaced by a model of scientific method developed by Galileo and Newton. But it is not at all surprising that Marx should have turned to Aristotle, if we keep a few historical facts in mind.

In the first place, for better or worse, political science and sociology did not yet exist and so could not furnish a methodology. Secondly, the Aristotelian tradition was, in fact, far from dead, in logic as well as in biology and history. And it was very much alive in the humanities. Indeed, there was a remarkable revival of Aristotle in the 1830s, when the first modern scholarly edition of his work began to be published, first in Germany, then in England.

By coincidence, the first volume of this edition of Aristotle's works was published in the very same year that Hegel died, and in the same place: Berlin, 1831. Aristotle had very much the reputation of being—in contrast to Plato—the great empiricist among philosophers. It was certainly to Aristotle rather than to Hegel or Plato that a student of philosophy would turn for the philosophical foundations of empirical scientific inquiry.

Bearing all this in mind, it is small wonder that Marx, studying philosophy at the University of Berlin from 1837 to 1841, should have viewed himself in the works of the founder of the scientific tradition.

Marx concentrated especially on Aristotle's philosophy of nature and on his scientific analyses. He studied not only the *Metaphysics* but also the *Physics*, *On the Heavens*, *On Generation and Decay*, *On the Generation of Animals*. These writings taken together introduced Marx, as early as 1839 and 1840, to Aristotle's method, and to Aristotle's concept of form.

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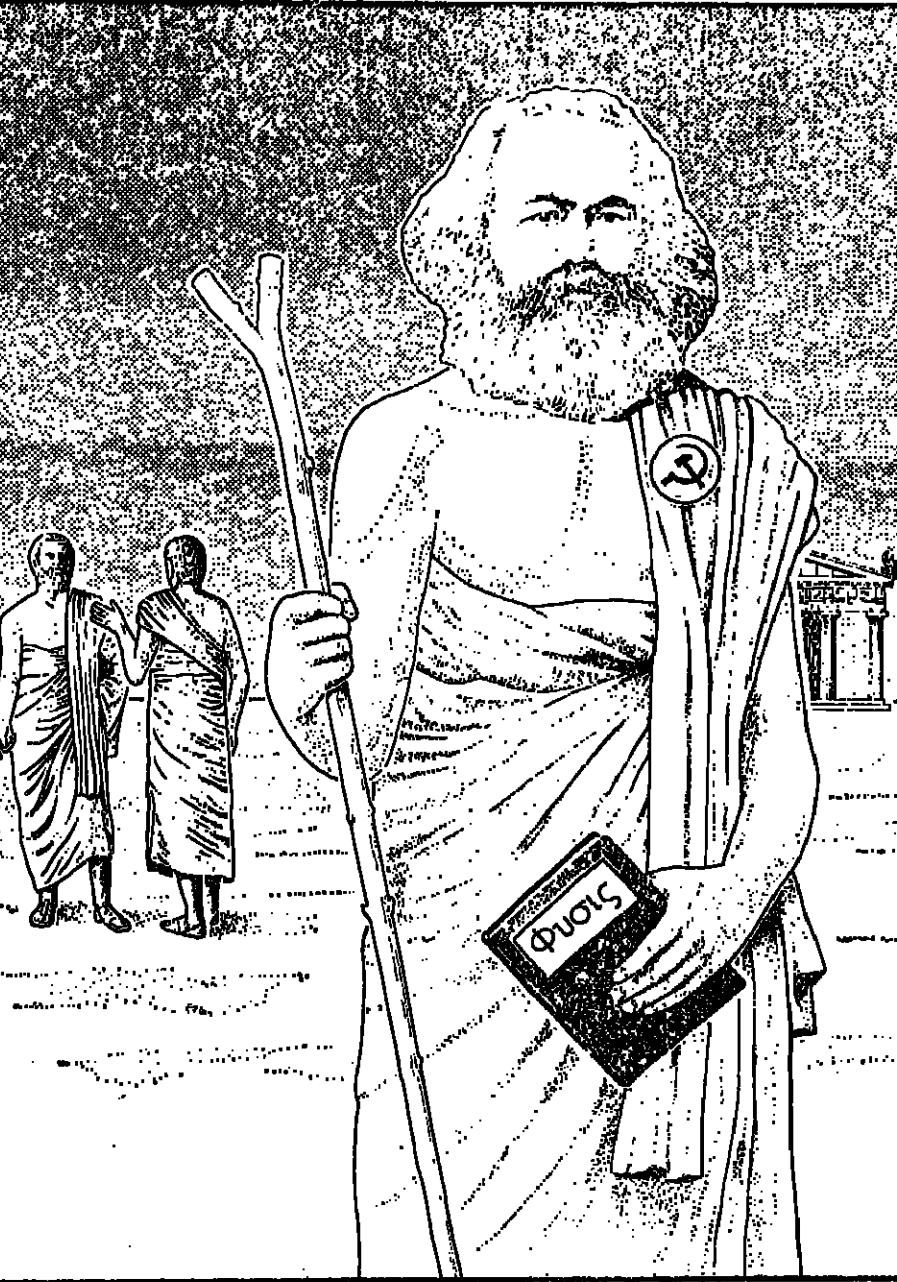
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These particular forms had, in Aristotle's view, the immense advantage of being observable; they could be observed and even dissected. And by observing the particular whole, one could build up a knowledge of the whole of nature in general.

Not only could one build up knowledge, by moving from the particular form to the general; one had to do so. If one wanted to know the general, namely nature, one had to investigate the particular, because one could not observe the whole of nature as such.

This rule applied just as much to functions as to forms. If one wanted to know how an animal functioned, how it lived, one had to examine the details of its anatomy.

Aristotle's method of investigating nature closely followed his conception of nature as generating itself into different forms. The crux of the matter was to identify the specific difference which made, say, a sheep different from a goat, and to identify the similarities which made sheep and goats akin to each other when compared with, say, sharks.



Every living form had its specific characteristics. These characteristic features could be established by means of comparison or, if you like, by differentiation. And this pro-

cess of comparing or differentiating forms among one another depended on precise empirical observation. In short, what a given form was like and in what respects it differed from others could be determined only by investigation.

Marx learned from Aristotle both the concept of form and the method connected with it. He learned to look at different types of society as so many different forms of a single substance, mankind, or society-in-general.

Mankind was society-in-general because the life of mankind throughout history had always been a social life, a life in society. But that social substance, mankind—so Marx believed—has generated different forms of society.

Mankind in its history has generated a patriarchal form of society, a feudal, a bourgeois and other forms of society. These different forms of society, Marx came to be able to examine by means of a method similar to the one Aristotle had used. They could be studied by differentiating the various forms. And one could then proceed to examine the parts or organs of each of the several kinds of society.

By studying the parts or organs of a given form of society one could then discover what made it tick. One could find out what its life was like. And what Marx believed himself to have discovered in this way was that the anatomy of society is to be found in its political economy.

In due course, Marx modified both Aristotle's method and his concept of form, in very original ways; but the debt to Aristotle remained a decisive one, so decisive, I think, that one cannot read and understand Marx's work without recognizing that Marx's method is just Hegel's dialectic transformed into a materialist dialectic. This may sound like an extravagant claim to anyone who is convinced that Marx is simply Hegel turned right side up again, and that Hegel's method is just Hegel's dialectic transformed into a materialist dialectic.

My reason is simply that if one wants to know what the world is actually like, one must get a pretty good idea of what he knew how he worked, and what methods he used. And so one gets a feel for his way of thinking.

These notes alone, say what views of Aristotle's method of investigation. It had already struck me some time ago that Marx always seems to study a subject by doing just what Aristotle did: he studies the

empirical evidence; at the same time he reviews earlier and current theories on the subject-matter—and then he brings the one to bear on the other.

Now, such a similarity in their ways of working might be just a matter of coincidence, so I did not think too much about it. But then I looked more carefully at the way Marx organizes his empirical materials. And this proved extremely interesting.

In his early investigation of political life, Marx begins with the general form—the state. Next he breaks it down into its various specific forms—monarchy, aristocracy and democracy. And then he examines the concrete, empirically observable particulars of the form he has decided to analyse, its parts or organs.

So, for example, he examines the place of the House of Lords in the British monarchical system. He traces its origins and its course of development, examines how the House of Lords has come to have the form it has in modern times, studies the basis on which men became members of the House of Lords and so on.

He then compares the House of Lords with the French Upper House and with the United States Senate and with the Parliament of Poland and the Upper Chamber in Sweden along similar lines; historically, genetically, in the context of the several constitutions of the several states involved. And from this massive collection of particulars, he then builds a concrete conception of what the state is and what makes it live.

But this, it finally struck me once I had managed to reconstruct the process, is Aristotelian method. It is a study of the generation, structure, modification and—potentially—of the demise of forms. Like Aristotle, Marx did not just study the parts or organs of forms. Like Aristotle, he builds up a concrete picture of the more general form through an examination of the particular forms, and their parts or organs.

Above all, and again like Aristotle, Marx proceeds empirically. This is important, because Marx is so often accused of having proceeded deductively, beginning with certain concepts and premises and simply arbitrarily superimposing them on the real world. That is what he did not do. Indeed, it was precisely for being deductive and arbitrary that he criticized Hegel. One might say that he criticized Hegel from the standpoint of Aristotle.

Marx says, in his *Critique of Hegel's Philosophy of Right* in 1843, that Hegel has devised a remarkable dialectical system. He has applied it to the state to show that the state is an organic whole. But Hegel's dialectical account is completely abstract. It does not explain the specific features that make the state into what it is—namely the form of political life.

What Hegel says about the state could equally well be said about the solar system or about an animal organism. An abstract dialectic, says Marx, explains everything. And so it explains nothing.

Now, I am not saying that Marx's theory is simply Aristotle's philosophy of nature applied to society. That would be as foolish as to say that Marx's theory is simply Hegel's dialectical philosophy turned right side up. Marx's theory is exceptionally complex and multi-dimensional, and no simple view of it will do justice. All an saying is that if we want to understand Marx's theory, we cannot afford to neglect its Aristotelian dimension.

Finally I should like to make two comments which set the above remarks in the context of recent and current treatments of Marx's theory. The first is that Aristotle and not Plato who was the great philosopher of antiquity by whom Marx was so profoundly influenced. Professor Popper's well-known conjecture that a direct line of intellectual descent runs from Plato to Hegel to Marx is wrong, and profoundly misleading. The second point is that Marx was very much an empiricist as well as a dialectician. Professor Popper is, in my view, quite wrong to polemicalize against dialectic as being no logic of scientific discovery, since in doing so he gives the impression (indeed, he seems to believe) that Hegel and Marx supposed it to be one. In fact, neither of them made this mistake.

At the same time, the Althusser-inspired anti-empirical trend in much of contemporary Marxist theorizing is certainly out of tune with Marx himself. Positivist empiricism is not the only kind of empiricism. There is therefore no need to ascribe to Marx a (wholly imaginary) special and original method of "constituting an object of inquiry" in order to save him from the charge of having been a (positivist) empiricist. In fact—of which I am firmly convinced—Marx's theorizing which has no solid empirical foundation is not "more scientific" than "bourgeois empiricism"; it is simply vacuous.

But, of course, in reading these notes one also gets a chance to try to reconstruct Marx's method of investigation. It had already struck me some time ago that Marx always seems to study a subject by doing just what Aristotle did: he studies the

empirical evidence; at the same time he reviews earlier and current theories on the subject-matter—and then he brings the one to bear on the other.

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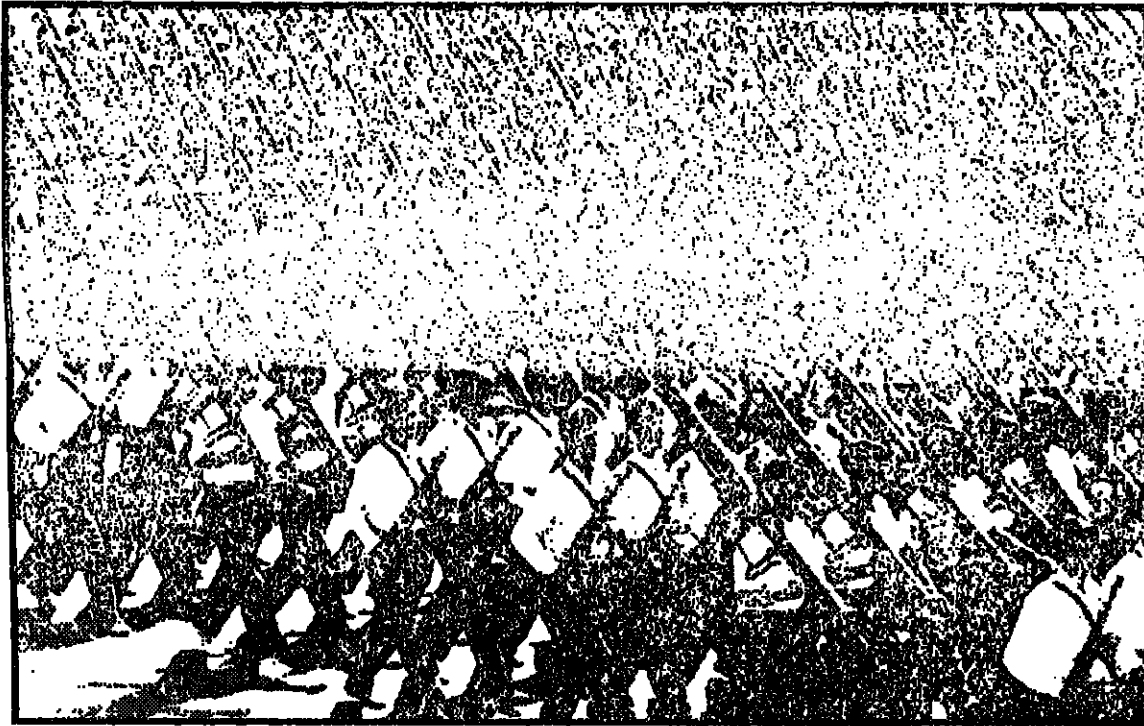
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Heinz Lubasz

The author is senior lecturer in history at the University of Essex. This article is a revised version of a talk given earlier this year on BBC Radio 3.

Days that changed the world



The people's militia parade on Chinese National Day.

Utopia and Revolution by Melvin J. Lasky... ISBN 0 333 21333 5

"In this world revolution is still the main stream", said Chairman Mao in one of his last pronouncements. There is no reason to presume that the aging statesman meant anything very precise by this claim (though there is also no reason to suppose that he meant anything much less precise by it than Mr Lasky means by his vast book and, as a statement, it certainly compares favourably in economy with the latter). But whatever the precise meaning of the immediate or remote future (and "still" scarcely suggests an excess of assurance), there is no doubt that it points with understandable and legitimate personal pride to a major aspect of recent history. The Russian and Chinese revolutions may not be without qualification the best events in the twentieth-century world; but, taken together, they make an impressive claim to be thus for the greater. Revolution is a stream which Mr Lasky (as befits his occupation) would be happy to detect in the twentieth-century world; but, taken together, they make an impressive claim to be thus for the greater. Revolution is a stream which Mr Lasky (as befits his occupation) would be happy to detect in the twentieth-century world...

unchallengeable importance. He seeks some of the breaks in power, and he seeks to understand it in what is, at least in intention, a genuinely historical manner: to show, in the words of part of his subtitle, "How Ideas, Ideals and Ideologies Have Been Historically Related to the Real World". It is not a book which makes it in effect very simply a contribution (to borrow one of his favourite phrases) to one of the elementary forms of the ideological life. It is incontinent, shapeless, haphazard in its structure, and exceedingly tiresome, full of banal points and the most irritating moralising. Nor does the book in practice realize the promise of its better self. But it seems a more just response to inquire why it has a claim which is both grand and worthy in intention, in which it was in principle possible to succeed and in which no one plainly has as yet succeeded, than simply to sink to the level of its worst self and nag back accordingly.

What Lasky offers is a study in intellectual epidemiology which looks very coherent and precise in sight either into the genetics of the infective organism or into the mechanism through which the infection in its evolved form is transmitted. In lieu of such determinate understanding, the heavily overworked metaphor of the life cycle (not one of the more advanced forms of the ideological life) and gestures flaccidly and repetitively towards Europe's Judeo-Christian intellectual heritage, reiterating the explanatory problems rather than contributing to their solution. It is necessary to be considerably more hermeneutic than this in one's approach if one is to grasp how persons do come to understand and explain the world in the ways in which they do. But this is to see the cause of the book's failure only in an error in its method of approach to the problem, a misconception as to how it is possible validly to study how ideas, ideals and ideologies are historically related. It is apparent, however, that Lasky is mistaken not merely in the method of his analysis but also in the major substantive conclusion to which this analysis leads him. By about 1700, he claims (p. 437), the ideological forms in which the first great revolutionary experience and its aftermath had moulded the modern political mind were never to be broken, or discarded, or even significantly reshaped. It is this judgment which puts what intellectual shape there is into the book as a whole and which leads him in effect to cast as its hero the great sceptic of Rotterdam, the Huguenot exile Pierre Bayle. The case of Bayle's attack on the Czech visionary Comenius is a tone which Lasky not merely admires but largely echoes. And this is in some ways very much as it should be. If ever there was an acceptable face of the development of this tradition, it is likely to be a very adequate sociologist of modern revolutions. A tone which is conceptually appropriate in discussing Comenius, an unarmad prophet par excellence in a little absurd when transferred implicitly to the politics of armed prophecy today, Lenin and Mao may have interested the world in an misguided fashion (when all else allowed has been made for the disparities of time and place) as did poor

Comenius. But unlike Comenius his admirability also changed the world.

There are two key disjunctions between the world of Comenius and the world of Lenin and Mao, each of which is probably a first disjunction both for the role of revolution in modern history and for the more fundamental aspect of the belief systems of modern professional revolutionaries. The first of these, an extrapolation from the experience of the French revolution, is the perception of revolution as a secular and material causal product of deep social, within an ahistorical frame of society and polity and a product which can alter this frame, with enthusiastic assistance from the friends of History and through the application of righteous violence, in a decisively progressive direction. It is possible to date the birth of this particular role, that of the secular professional revolutionary who will not shrink from spilling the blood of the righteous, with some precision to the period between 1788 and 1796. For all the extent of his researches Lasky gives no indication of having grasped the drastic shift both in the meaning of the word "revolution" and in the expectation of how it might make sense for individual believers in political perfectibility to live their lives which followed from the events of 1789 to 1794. But even as late as 1916 there was still no historical consciousness that this pattern of violence and convulsive political and social transformation was in any sense a replicable performance. What has ensured the survival of the credibility of such happenings and their consequent persistence as important features of the belief systems of historical actors is in the first instance their having happened and happened in some numbers since 1916. What has made their happening possible is an historically novel and hectic field of geopolitical and economic relations throughout the world, generated by the expansion of capitalist production.

We still do not understand the dynamics of the relentless encroachment from the creation of the world market and from the political repercussions of this creation with any great clarity. There is no reason whatever to suppose that revolutionaries (Marxists or others) understand it any better than anyone else (though they have probably devoted more effort so far than any other group to the attempt to grasp it intellectually). The word "capitalism" does not appear among the thousand and more entries in Lasky's index and its historical impact leaves not the slightest intellectual impress on his pages. Consequently he offers not a glimmer of understanding of how the prospects have come to be so heavily armed.

By telling his story as one of the solemn (or hilarious) unfoldings of an extremely bad idea and by selecting to tell it in such an intellectually unengaging fashion Lasky has not so much failed as simply chosen not even to risk battle. What he has undeniably succeeded in doing, however, is to draw attention to a very large vacancy in the reasonably honest political self-understanding of the modern world.

John Dunn

explain the failure is in fact relatively easy. Throughout the book Lasky treats revolutionaries and their ideas, even their metaphors, with a high degree of solemnity. But he largely fails to treat revolutions and what has caused their occurrence at all this way. One could have good reason to treat Utopian ideas in general seriously even if they had never noticeably changed the world. But the best reason for taking the ideas of revolutionaries as such seriously is that revolutionaries stand in any greater moral danger on this terrain in general than do, for example, conservatives. The variations in men's tastes in imagining the political future are not isomorphic with their elementary moral trustworthiness. The most, perhaps, that can be said on this score is that those who are programmatically morally ambitious in their hopes for the shape of human society face keener temptations to succumb to such temptations.

There is no clear necessity for them to succumb to such temptations. Those who are morally more ambitious in their demands, which they seek to impose on society have no need to be any less exigent in the moral demands which they choose to impose on themselves. Indeed it is most unbecoming if they do choose to be so. Social fastidiousness cannot licence individual complacency and least of all complacency towards one's own emotional comfort.

Noticeboard is compiled by Patricia Santinelli and Pauline Downs

Chairman: Dr M. G. Audley-Charles, reader in geology at Imperial College, has been appointed to the chair of geology, at Queen Mary College from October 1. Professor H. R. Lown, professor of medical history, University College, Cardiff, has been appointed to the chair of history at Westfield College from October 1. Dr S. Jenkins has been awarded the title of professor of clinical engineering in respect of his post at St George's Hospital Medical School. Dr M. Redwood has been awarded the title of professor of electrical engineering in respect of his post at Queen Mary College. Professor Norman A. Gendebler, Steadfast professor of history, Virginia University, has been appointed to the Harold Vyvyan Harmsworth chair of American history, 1978-79, at Oxford University. Dr Kenneth V. Peasnell, lecturer in the department of accounting and finance, Lancaster University, has been appointed to the Wolfson Chair in accounting and finance at the University of Liverpool. Dr Hugh Tucker, former director of the Institute of Race Relations, has been appointed to a chair in the department of human biology and health at the University of Lancaster from September. Dr R. G. Rhodes, director of the Wolfson Project on magnetic levitation of high speed trains, at the University of Warwick, has been awarded a personal chair in the department of engineering. Dr J. F. Powden, who is on the Central Review Staff, has been appointed to an honorary chair in the department of politics of the University of Warwick.

Appointments: Dr M. G. Audley-Charles, reader in geology at Imperial College, has been appointed to the chair of geology, at Queen Mary College from October 1. Professor H. R. Lown, professor of medical history, University College, Cardiff, has been appointed to the chair of history at Westfield College from October 1. Dr S. Jenkins has been awarded the title of professor of clinical engineering in respect of his post at St George's Hospital Medical School. Dr M. Redwood has been awarded the title of professor of electrical engineering in respect of his post at Queen Mary College. Professor Norman A. Gendebler, Steadfast professor of history, Virginia University, has been appointed to the Harold Vyvyan Harmsworth chair of American history, 1978-79, at Oxford University. Dr Kenneth V. Peasnell, lecturer in the department of accounting and finance, Lancaster University, has been appointed to the Wolfson Chair in accounting and finance at the University of Liverpool. Dr Hugh Tucker, former director of the Institute of Race Relations, has been appointed to a chair in the department of human biology and health at the University of Lancaster from September. Dr R. G. Rhodes, director of the Wolfson Project on magnetic levitation of high speed trains, at the University of Warwick, has been awarded a personal chair in the department of engineering. Dr J. F. Powden, who is on the Central Review Staff, has been appointed to an honorary chair in the department of politics of the University of Warwick.

Portico events: The 22nd National Student Drama Festival sponsored jointly by the Scottish Tourist Board and the Sunday Times begins today in St Andrews until April 9. The programme will consist of student productions of new and well-known plays selected from all over Britain. There will also be practical workshops, discussions and play readings directed by professionals. Telephone enquiries St Andrews 6114 or 5373 Edinburgh 332 2433 ext. 253 and London 883 4586.

Open University programmes April 2 to 8: Saturday April 2. 8.00 Personality and Learning: Howard Gardner. 10.00 The Philosophy of Language: David G. Reardon. 10.30 The Philosophy of Language: David G. Reardon. 11.00 The Philosophy of Language: David G. Reardon. 11.30 The Philosophy of Language: David G. Reardon. 12.00 The Philosophy of Language: David G. Reardon. 12.30 The Philosophy of Language: David G. Reardon. 1.00 The Philosophy of Language: David G. Reardon. 1.30 The Philosophy of Language: David G. Reardon. 2.00 The Philosophy of Language: David G. Reardon. 2.30 The Philosophy of Language: David G. Reardon. 3.00 The Philosophy of Language: David G. Reardon. 3.30 The Philosophy of Language: David G. Reardon. 4.00 The Philosophy of Language: David G. Reardon. 4.30 The Philosophy of Language: David G. Reardon. 5.00 The Philosophy of Language: David G. Reardon. 5.30 The Philosophy of Language: David G. Reardon. 6.00 The Philosophy of Language: David G. 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BOOKS

Jonson the serious artist and teacher

Ben Jonson: Public Poet and Private Man
by George Parfitt
Dent, £5.95
ISBN 0 460 10429 2

"No one doubts that Ben Jonson was one of the great characters of English literature." This is Mr Parfitt's point of departure for his study of Jonson, and it is hardly to be disputed. A strong personality manifests itself throughout Jonson's writing, and the evidence suggests that he made a vivid impression on everyone who came into contact with him. Unhappily it is also clear that many of those who met him did not like him; more importantly, many readers today are repelled by the man they seem to meet in his works. Of course the real-life Jonson may not have been at all like the idealized form of him in the study, and he is not always consistent in the way he presents himself as a writer. Mr Parfitt recognizes this clearly and refers frequently to the "tension" between the different sides of Jon-

son. He also rightly warns us against a selective reading of the evidence and the attempt to force Jonson into too rigid a mould. Unfortunately he does not always heed his own warnings. He himself clearly responds most warmly to the moral, didactic Jonson, the serious artist and teacher. Again, no one will dispute that this is an important aspect of Jonson, and one which in the past—though not in recent years—tended to be under-emphasized. As a view of Jonson it need not be affected by the indications that he was not always the sober, righteous, reasonable, and virtuous figure he constantly held up for emulation. Parfitt, in fact, sees Jonson's life as "an unremitting effort to make himself and his art into something defined by his deepest beliefs and ideals", an effort constantly thwarted by the recalcitrance of his own nature and the imperfections of the society in which he lived. This may well be true, but if so it is a pity that Jonson was not more explicit about the struggle; instead, he seems frequently to offer only a

calm assumption of moral superiority and a serene belief that virtue is bound to triumph. Parfitt, it seems to me, has to do a certain amount of "reading into" some of the texts he deploys, and they will not always bear the strain (I think, for example, that he quite mistreats Drummond's well-known comment upon Jonson that he was "Vindicative, but if he be well answered, at himself").

More importantly, Parfitt's approach limits his response to the plays. He is very good on the poetry, as might be expected, going on the masques and on Jonson as a translator and imitator of the classics.

He has much of interest to say, too, about the earlier and less well known plays, but he has less to offer about the major masterpieces. This may be because he is reluctant to enter areas to which so many other critics have devoted themselves. It is certainly not because he is not interested in Jonson as a practical playwright; indeed he emphasizes the need to see Jonson on the stage, although he is

critical of some recent productions. The problem really is, though, that *Epicoene* and *The Alchemist* are not really very rewarding if approached too strictly from a moralistic standpoint. This is even truer of *Balshazzar's Feast*, and when Parfitt found himself writing that when Jonson wrote this play his mood may have been "close to despair" and that "if [his interpretation] makes *Balshazzar's Feast* sound like Jonson's version of *King Lear*" he is quite happy, he should have started to wonder whether his approach was not leading him astray. It would be quite unfair to suggest that this is all Parfitt has to say about *Balshazzar's Feast*, and indeed he recognizes the vitality and vigour of this and other comedies. But it is still true that while the Jonson he gives us is an admirable and worthy figure, he does not sound like much fun.

Ben Jonson: Public Poet and Private Man is really rather a solemn affair, in fact, and cheerfulness does not often surface. It will probably be best read as a correc-

tive to other views of Jonson, not, it were, it might seem, to the reader. It is a difficult, indeed, to see what audience Parfitt has in mind. His style is often very good, but occasionally it is too scholarly, and one has to be reading a text from a tape-recording of a lecture for under-graduates. On the one hand the reader is assumed to have a fair knowledge of the Jonson canon, and on the other hand everyone who writes on Jonson is no doubt that it is (in effect, a serious contribution to the subject, and one which will, way naturally on to reading through tutors may find the to gloss it for their students.

J. B. Bamber



Grace Plunkett's caricature of George Moore and Susan Mitchell as "Cupid and Psyche" is reproduced in a new edition of Moore's *Hall and Fairwell* edited by Richard Cave. Sinythe Ltd, £20.00.

The First World War in Fiction
edited by Holger Klein
Macmillan, £8.95
ISBN 0 333 18823 3

Poetry of the First World War
by J. M. Gregson
Edward Arnold, £3.30 and £1.60
ISBN 0 7131 5930 8 and 5931 6

The great literature of war—Homer and Tolstoy, Fabrizio at Waterloo, the last poems of Georg Trakl, the unforgettable pages in Froust's *Le Temps retrouvé*—offers us moments which are instinct with humanist affirmations. The literature of the First World War offers us moments which are beyond humanist reach almost beyond life itself. There are two war poets who wrote Alain de Botton's *Judge* (1921). The first

which is made and the one which is spoken of, and the almost nothing in common. Perhaps only studies like Paul Fussell's, which are concerned with more than the literature, or compilations like Guy Chapman's *Vain Glory*, in which soldier and writer cut shoulders, can hope to do justice to the sheer diversity of the experience, and bring the two wars together in one image. Of the 18 essays in Holger Klein's compilation, all but one (J. P. Stern's selection of sections from his brilliant 1952 study of Ernst Jünger) are new, and those by Walter Kendrick (on Giono), John Flower (on Dorgels) and Jonathan Dale (on Drieu la Rochelle) are excellent. Robert Pynson's study, which is somewhat schematically contrasted with Hasek and Karl Kraus, whose *War* wrote Alain de Botton's *Judge* (1921). The first

Putting war into words

(New York, 1974), despite what Pynson says to the contrary, Marjorie's turbulent prose is sensibly discussed by Christopher Wagstaff. Claims are made for the valuation of the reputations of R. H. Mottram, Henri Barbusse and Erich Remarque, and the editor himself makes a case for Henry Willmott, which at least has the merit of reminding us of the fine merit of William Kermode's *The Patriot's Progress*. It is not clear why, if Remarque is to be rediscovered as "a great writer", Renn (Krieg) and Jules Romains (*Verdun*) should not also be accorded the benefit of reevaluation. The question of which is the best English novel of the war remains unsettled, and C. N. Smith's (*Freddie Manning*) and John Morris (*Attitude*) come to the fore.

Cult of the primitive

Liam O'Flaherty the Storyteller
by A. A. Kelly
Macmillan, £7.95
ISBN 0 333 19768 2

William Golding: The Dark Fields of Discovery
by Virginia Tiger
Marian Boyars, £2.50
ISBN 0 7145 2595 2

Lord of the Flies, St Mowat: The Memoirs of a Survivor. These few titles taken at random suggest the diversity of "primitivist" themes in modern literature and the failure of critics, by and large, to investigate so pervasive an ideological trend. A history of literary primitivism might trace today's almost ubiquitous assumptions to the debates of the late nineteenth century, when doctrines of man's underlying savagery and the "vener" of civilization were far more closely tied to biology and ethnology than they are today.

The Darwinian notions of struggle are the explicit subject of Jack London's books, of Wells's *Island of Dr Moreau* and of social reporting such as James Greenwood's spectacular "Man and Dog Fight in Hanley" (reprinted in Peter Keating's recent anthology, *Into Unknown England*). The ethnologist's fascination with man's savage state can be seen in Zola and his followers for whom realism became a dispassionate study of human degradation. The reception of all these writers was violently controversial; today's literary primitivism, though no less shocking in its effect, exists in a climate where

art is expected to shock, and so causes little notice. In fact, to protest against the mystique of the primitive in modern literature might seem to require a degree of righteous self-deception which we no longer possess. Violence is too palpable a political fact for its fictional embodiment to cause much comment. Perhaps this is why the suggestion that the primordial element is dominant at all times and places, offering a universal key to man's inner nature, now meets with so little opposition. Golding and O'Flaherty are among the many writers who have seemed to endorse a primitivist cult, though their reasons for doing so have little in common.

The vast majority of O'Flaherty's stories are set in the West of Ireland, and all are conditioned by his upbringing in the Aran Islands where social structures were rudimentary and man and nature seemed consequently almost identical. O'Flaherty's Ericsson and evidence offer themselves as an authentic record of that life in language which arises directly out of the culture itself. His highly localized vision is best realized in anecdotes which, as literary forms, are almost as minimal as the lapidary verses, which Wordsworth praised so eloquently in his "Essay on Epitaphs". When O'Flaherty moves to more urban and historical subjects, the violence seems to express a personal tension and a false note is frequently struck. The resulting *oeuvre*, for all its interest, is an unpropitious topic for a critical monograph which concentrates mainly on inter-

nal analysis of theme and style. A. A. Kelly offers thoughtful sensitive evaluations of the but the narrowness of her focus rather heavy-handed apparatus make this a difficult read through. Golding, a latecomer to the primitivist cult, is an ideological revision agent, modern world. His novels, down to the state of nature, suggest that it is all we have to show the poverty of the benefits of magic, religious artistic creation, his themes of hunter and hunted, and fear reflect man's isolation and his need for something powerful than reason to combat his inhuman self.

Golding is evidently indebted to modern sciences such as biology and anthropology for his understanding of this cult. However, he has not managed to break out of the familiar, to find a total confrontation with the contradictions of modern culture. *The Inheritors* is a primitivist tale and an unmitigated success, while *The Spire*, a much more ambitious, was a partial failure. Virginia Tiger's provocative informative critical handbook, first published two years ago, is now revised in paperback. Other critics of Golding's, who seem him as a religious, whose message for our age is accepted almost unthinkingly, combat his inhuman self. Golding is evidently indebted to modern sciences such as biology and anthropology for his understanding of this cult. However, he has not managed to break out of the familiar, to find a total confrontation with the contradictions of modern culture. *The Inheritors* is a primitivist tale and an unmitigated success, while *The Spire*, a much more ambitious, was a partial failure.

Patrick Patten

BOOKS

Nematodes

Physiology of Nematodes
by D. L. Lee and H. J. Atkinson
Macmillan, £5.95
ISBN 0 333 18600 1

Evolution as a Basis for the Systematization of Nematodes, 2nd edition
by L. Andrassy
Pitman, £7.90
ISBN 0 273 00968 0

Many biologists may be surprised to learn that nematodes are probably the most numerous of the metazoa. In number of species they third after the insects and molluscs and are found in a great range of widely different habitats. For many years they have largely remained the preserve of workers on plant and animal parasites, although in fact the majority are free-living organisms, and have been ill-served by often perfunctory accounts in texts on invertebrate zoology.

Interest in nematodes is now growing very rapidly, not only because of their obvious practical importance in medicine and agriculture, but also because they provide unique opportunities for the study of a number of biological problems. The publication of the second edition of *Physiology of Nematodes* is thus most timely for it provides an excellent introduction for both undergraduate zoologists and researchers from other disciplines working on the group for the first time. Compared with most animal groups, the nematodes show relatively little morphological diversity and a knowledge of possible physiological differences is central to any understanding of their adaptations to different modes of living.

This edition has been written by Professor Lee together with Dr A. J. Atkinson and has greatly benefited from this collaboration between experts in animal parasitic and free-living and plant parasitic forms, for it now provides a comprehensive coverage of the group.

The original text has been extensively rewritten and expanded and is excellently complemented by clear diagrams and tables. The authors have succeeded in the difficult task of including a great deal of interesting and important material in a concise and very readable book.

Some grasp of phylogenetic relationships is important to the understanding of any group of animals. Nematode phylogeny and taxonomy are difficult and confusing and, like so many aspects of the group, suffer from the division of workers into the fields of free-living and plant and animal parasitic forms. *Evolution as a Basis for the Systematization of Nematodes* by Professor Andrassy is an attempt at a comprehensive classification based upon phylogeny.

Although it is a book for the specialist, the general reader will find the sections on history and perspectives of classification and on evolutionary trends of some interest. Whether the revision of the class Nematoda into three subclasses and the new system of classification proposed by Andrassy will find acceptance only time will tell. Such proposals often generate protracted and sometimes bitter controversy.

C. J. Mapes

Reproduction

The Evolution of Reproduction
edited by C. R. Austin and R. V. Short
Cambridge University Press, £6.50 and £2.50
ISBN 0 521 21286 3 and 29085 6

When the first volumes of this series, *Reproduction in Mammals*, appeared a few years ago, they were a timely attempt to provide a concise and up-to-date account of reproductive biology. The rapid development of new techniques had generated a vast amount of information not easily assimilated by undergraduates or scientists outside the field. Their presentation was attractive, their style informal and calculated as much to arouse interest as to impart facts. To those familiar with the first five volumes of the series, the sixth will need no further recommendation.

In the first chapter of *The Evolution of Reproduction*, the significance of the relatively straightforward mammalian method of reproduction is compared with more esoteric procedures such as hermaphroditism and parthenogenesis. This leads to a discussion of the primary genetic control of mammalian sex determination. The field is a fascinating one, but some of the issues are skated over somewhat too lightly. For example, the problem "Why a one-to-one sex ratio?" is posed, but the answer peeters out in rhetorical questions. "Would salmon swim hundreds of miles up river to the place of their birth if there were no sex at the end of the journey?" Possibly not; but if sex were the only reason for swimming up rivers, male and female salmon could quite easily dispense with the journey and mate in the sea. Fundamental questions deserve serious discussion, even if they cannot yet be answered.

Sex is put in its social context with a discussion of possible breeding systems—monogamy, polygamy, promiscuity—and their implications for reproductive success. The subtle interplay of social and reproductive functions, and the fine balance of costs against benefits, are well illustrated by the analysis of examples; none more poignant than that of the extravagant tail feathers of the male attract females, but prove highly inconvenient in high winds, reducing flying time and, consequently, food intake.

Species, by definition, are populations of organisms in reproductive isolation from each other. Fertilization by the sperm of another may fail; or a hybrid conception aborts during pregnancy; or the offspring is born but proves sterile; or interbreeding may be prevented only by the failure of two species to meet. After discussing the relations between mammalian reproduction and speciation, Roger Short touches—all too briefly—on the past and future evolution of human reproduction. Other chapters deal with the evolution of mammalian viviparity, and with the adaptation of eggs and sperm to their own environment.

The Evolution of Reproduction should have a wide appeal to those interested in evolution and biology in general, as much as to those with a specific interest in reproduction.

P. J. Hogarth

Balance of nature

Insects and the Life of Man: Collected Essays on Pure Science and Applied Biology
by V. B. Wigglesworth
Chapman & Hall, £1.25
ISBN 0 412 14730 9

In the last 50 years Sir Vincent Wigglesworth, a leading figure in insect physiology, has had unique opportunities to see the practical problems of medical and agricultural entomology through the eyes of a physiologist. When invited to address learned or lay audiences, he has chosen to speak on topics of wide general interest and this book brings together 16 of these lectures in the form of essays.

The first six essays are mainly concerned with problems of insect pests or agriculture. In "Insects and human affairs" (1961) he warns against over-enthusiasm for insecticides and weedkillers, partly because many of our crops naturally require pollination by insects, "DDT and the balance of nature" was written after a tour through North America in 1945 and describes the successful campaigns against human lice and mosquitoes, but already he regarded the agricul-

tural uses of DDT as a two-edged sword. A brief postscript tells the reader that this use of DDT is now widely banned. Two chapters consider the effects of postwar government policy, which separated the agricultural advisory services from university research. In "The fauna of the orchard" (1959) his picture of the ecological situation is far from clear by modern standards. The critical part played by density-dependent factors is obscured by misquotation of their definition, by unfortunate examples and by sloppy use of the word "control".

"Malaria in Ceylon" (1935) is a masterly account of the complexities of the interactions between man, mosquitoes, rainfall and epidemic disease, but readers would have been helped if the spectacular success in the later eradication of the disease and its recent reappearance had been referred to in a short addendum. "Malaria in war" uses information only up to 1940 and the problems in the First World War form the main subjects for discussion. The next chapters deal with insect physiology and the philosophical basis for scientific discovery seen

in historical context. Here the author's views are particularly stimulating. "The epidemical cell" was a lecture given to the Royal Society in 1960. It tells the story of some of Wigglesworth's own research on the blood-sucking bug *Rhinolimus* (whose portrait adorns the book's cover). Line drawings help to explain the complex changes seen in the cells as they perform their diverse tasks in the body of the insect. It gives a fascinating insight into the way in which scientific research develops by the interplay of observation, imagination and experiment.

A discourse on Wordsworth's view of science and on "The religion of science" complete the book. Wigglesworth's easy style makes the book attractive and many of the ideas are as fresh as when they first appeared; but the historical accounts of the medical and agricultural problems are now dated. More extensive addenda to some of the chapters would have increased the value of the book to the specialist and to the general reader.

G. C. Varley

A taxonomic survey

Protozoa
by Albert Westphal
Blackie, £9.90
ISBN 0 216 90216 9

This introduction to the protozoa is presented in three main sections. The largest section, occupying about 60 per cent of the book, is a highly illustrated, taxonomic survey of the principal groups of the flagellates, rhizopods, sporezoa (including Cnidosporidia) and ciliates.

About one-third of the book is concerned with the structure and function of the cell organelles of the protozoa. This is an area in which there has been an explosive growth in knowledge in recent years, since the protozoa provide excellent material for studies of ultrastructure and cell physiology. Such subjects as nuclear function, mitochondria, food uptake and digestion are given a broad coverage and in many areas the reader can gain a general impression of recent views on these subjects. However, the approach is too superficial for students with even a moderate understanding of cell biology. For example, the treatment of mechanisms of motility and osmo-regulation gives little idea of the current views on such subjects as ciliate myonemes, the structure, movement and coordination of cilia and flagella and mechanisms of ionic regulation that play a vital role both in the control of osmotic levels and in the sensory and motile behaviour of the organisms; in all of these cases the information in the book lags behind that provided in other textbooks, let alone monographs, that are quoted in the bibliography.

The final section is concerned with protozoa and their environment. This includes a very brief review of the habitats of free-living protozoa and a more detailed survey of the habitats, life cycles and pathogenic features of a selection of the more important parasitic protozoa.

The book is well produced and makes particularly effective use of bold type for the introduction of a generous amount of the extensive terminology of the subject as well as for the names of groups. The illustrations include surprisingly few useful electron micrographs, but some good drawings based upon electron micrographs, but the majority of line drawings are often inferior to the originals from which they were derived.

This English version of the original German book has an unexpected number of spelling errors; for example, the use of clyostome for cytostome could mystify many a student. There are also scientific errors including the suggestion that the cytostome opens in the flagellar pocket of ciliates. There is no proper bibliography through which one could follow up the information given and the short list of textbooks, monographs and journals is of very little help.

Michael Sleight

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De Gordon Daniels is lecturer in modern far eastern history at the Centre for Japanese Studies, Sheffield University;
John Dunn is a fellow of King's College, Cambridge and author of *Modern Revolutions* (with Dr A. P. Robertson), and *Democracy and Opportunity: Political Change in Asia*;
De Peter Lloyd is reader in social anthropology at Sussex University. His books include *Classes, Crises and*

Coups and Power and Independence;
A. C. Milner is lecturer in south east Asian history at Kent University;
Dr P. J. Hogarth is lecturer in biology at York University. His book *Viviparity* is to be published shortly;
Keith Thurley is senior lecturer in industrial sociology at the London School of Economics;
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BOOKS

Two city states

The Development Progress of Hong Kong and Singapore by Theodore Geiger and Frances M. Geiger Macmillan, £10.00 ISBN 0 333 18585 4

The importance of the city-state has been much discussed as a crucial factor in the development of the classical Greek world and of Renaissance Italy; it is rare to find an argument for such a state in the modern debate on development strategies. In the world of the development theorist, urbanization tends to mean the growth of the urban poor and cities have to be seen as dependent on their rural hinterland. Social and economic progress is argued to depend on land reform, the mobilization of peasant labour and the concentration of capital investment in new industrial projects. Such progress has to be stimulated and protected by states based on national identities and infused with a modernizing and reformist or revolutionary spirit.

Hongkong and Singapore have not been seriously considered as relevant to discussions of development, partly because of their old political status, partly because they are not seen as demonstrating any of the social, economic and political processes which are judged to be central to any development strategy. The Geiger's study of the two 'city-states' and their contention that they provide models for development is therefore an intriguing idea worth pursuing in length and deserving detailed examination. The fact that both situations are examples of Chinese approaches to industrial development clearly adds to their significance as well as the rather obvious contrast between the laissez-

faire philosophy of the Hongkong government and the emphasis on economic planning of the People's Action Party (PAP) leaders in Singapore. The book takes the form of a report 'intended for policy makers and opinion leaders in the developing countries and in the United States and other developed nations, as well as for development experts'. It was originally published in 1974, but is republished here with a new preface taking the two situations up to the summer of 1975. The treatment is straightforward and descriptive, with the two cases discussed separately and an attempt is made to sketch in the basic elements of Chinese culture and to draw lessons applied in other developing countries. The main analysis is then applied to explaining the reasons for the high rate of growth with some account of the development of the social policies of the two governments.

Although there are serious gaps in the economic data available, particularly in the field of consumption and real wages, the information presented supports the view that the development of an industrial manufacturing base in Hongkong and Singapore has allowed a fairly dramatic improvement of living standards to take place for much of the population. Certainly, the growth of exports and the development of both cities as international commercial, financial and administrative centres has been extremely impressive.

The book is useful enough as a short reference or guide to published data on both cities. Unfortunately, the authors try to go beyond this, but only succeed in presenting an exceedingly superficial account of government and business policies and their effects. Larger companies are said to 'con-

duct their relationships with employees more in accordance with modern industrial standards, most cases, their wage and social management...'. The limitation of the Chinese entrepreneurs, managers, administrators and professionals have made rapidly growing firms and a number of the sophisticated analyses of the Chinese towards Hongkong, which would have been useful.

Similarly in the case of Singapore, there are many references to 'young, vigorous, efficient' and 'dedicated leaders' - and even 'so far-sighted that private entrepreneurs have been urged to think out their long-term strategy, but the fundamental analysis of the questions are actually general relations are described in decision-maker could learn from this type of description; the enthusiasm of the governments of both states' and the policies which have pursued.

It is unfortunately true that the opportunity here of making thorough, independent appraisals, two very significant cases, has not really been taken. In view of the importance of these cities in the world, it is only to be hoped that others will be able to attempt a more precise comparative study of the two states.

Keith Thomas

The Japanese achievement

The Japan Reader, volume 1, Imperial Japan, 1800-1945; volume 2, Postwar Japan, 1945 to the Present edited by Jon Livingston, Joe Moore and Felicia Oldfather Penguin, £1.75 each ISBN 0 14 02 1967 6 and 1968 4

Japan is the most obtrusive and least understood of the economic powers of the postwar world. Economists praise her industry, ecologists lament her stained and poisoned landscape, but overall she is the object of flimsy and random reporting. Against this unhappy background these volumes are very welcome additions to low priced literature in a neglected field.

The editors are all members of the American Committee of Concerned Asian Scholars and have marshalled documents, literature, reports and academic writing to describe both the costs and the gains of Japan's achievement. These anthologies aim to emphasize social and economic themes in Japanese development, and, on balance, they achieve considerable success.

In *Imperial Japan, 1800-1945* the editors refer to current historical fashion and present the sufferings of the nineteenth-century peasant. They largely ignore several major themes of recent western scholarship. The rapid growth of education, which preceded modernization, receives no significant mention; and in their treatment of Meiji politics the editors neglect 'relativist' assessments and prefer earlier accounts which dramatize the conflict between oligarchs and 'democratic' leaders.

Despite these unconventional choices this patchwork volume has many virtues. Its main strength lies in the rediscovery of old works and themes which have been half forgotten in the years when modernization has provided the language and morality of academic debate. E. H. Norman's account of conscription and its opponents describes inequalities and paradoxes which

are often ignored by writers of macro-history. Baroness Edimura's forty-year-old account of suffering in the Mike coalmine *Are Miners Human Beings?* clarifies the realities which sustained industrial advance. While in the solid closing pages Robert Guillain's distinguished account of the bombing of Tokyo reminds us of the immense domestic costs of Japan's military adventures.

This anthology may fail to provide a full and coherent narrative of one and a half centuries of social and economic development, but this largely reflects the present imbalance of western scholarship. Foreign policy, economic development and domestic politics have all drawn increasing attention but social history remains a largely neglected field of research.

In *Postwar Japan: 1945 to the Present* much emphasis moves from social and economic themes to international relations and the 'business community'. The Occupation years are largely chronicled by American documents which trace the shift from postwar surrender to cold-war alliance. The materials which illustrate the reverse course, from reform to reconstruction, are especially valuable as they have no parallel in rival volumes. Yet one regrets the omission of important Japanese voices. American writers have provided Japan's constitution and Japanese responses transformed it into a living reality. Many of the extracts dealing with contemporary agricultural, education, and politics are drawn from definitive monographs, but radical journals are selected; unusual material available and dealt incisively with controversial subjects. These extracts confront relations between American corporations and Japan with a welcome candour and collect valuable data in a few brief pages.

In comparison with *Imperial Japan* this volume suffers from surprising gaps in its social coverage. Pollution receives little treatment, women are ignored, welfare is largely omitted, and there are no extracts from studies such as *Dore's City Life in Japan* which could add

human dimension to general controversy.

Unfortunately *Postwar Japan* striven too hard to keep pace with diplomatic developments. Much of its writing on international relations already seems a little dated and its experiences in present Japan. The articles on Thailand, a loosely structured social system', published posthumously in 1950, was a preliminary attempt to specify the main characteristic of Thai culture and social organization. It subsequently achieved an important place in the anthropology of Thailand because it both supported and 'explained' later descriptive reports of individualism, impermanence of relations and obligations, and the absence of a strong sense of duty; all features which cumulatively convey the image of amorphousness. Despite the considerable scepticism of some about both its theoretical value and its appropriateness for the overall description of rural Thailand the idea of loose structure has survived as an important influence on most anthropologists working there.

Potter's goal, the final repudiation of this perspective, is expressed

Gordon Dawson

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BOOKS

Monks in politics

Religion and Politics in Sri Lanka by Urmila Phadnis Hurst, £7.00 ISBN 0 903983 52 4

First of all, a word to the unwary who may be misled by the title of this book. While ostensibly concerned with religion and politics the actual subject matter is much more limited. Urmila Phadnis is concerned almost exclusively with the relationship between the Buddhist monks of Sri Lanka and various governmental processes and policies. In so far as they affect their interests, Phadnis is not concerned with the minority religious groups of the country, the Hindus, Muslims and Christians, nor even with the Buddhist masses. Rather she concentrates on what she sees as the Buddhist elite, the monks, and their relationship with the political elite of Sri Lanka.

The first two chapters of the book are devoted to the historical (and sociological) background. Then, after a detailed description of the organization of the Sangha, she discusses a number of themes which involve contact between the Sangha and the political parties of Sri Lanka. The methods used by the parties to gain the Bhikkhus' support are described, followed by a discussion of the electoral behaviour of the Sangha since independence. She mentions in the extreme various government attempts to reform the Sangha; the attempts of the Sangha to influence political decisions concerning the language

issue, and their involvement in international affairs. Overall, the book is well researched and documented. In the main, it is based on data not easily accessible to most observers, in particular newspaper files and private records. Phadnis also introduces a certain amount of data obtained from her own questionnaires administered to Bhikkhus and to politicians. If the major virtue of this volume is the presentation of this data, it is also its major weakness. The process of presentation she makes a number of incisive and thought-provoking comments on the political role of the Sangha and the changing attitudes of the political parties to religious issues. Thus she demonstrates the slow erosion of the Sangha's role as a neutral intermediary as the partisan nature of their actions becomes more and more blatant, and the growing bipartisan nature of the religious policies of the two major parties.

It is, perhaps, invidious to criticize authors for what they have not done, yet one must emphasize the strictly limited nature of the author's analysis. Compared with two recent works on the relationship between Buddhism and politics, Michael Mendelson's *Sangha and State in Burma* and S. J. Tambiah's *World Conqueror and World Renouncer* (both reviewed in *The Times* December 17), Phadnis's book is pedestrian in the extreme. Nowhere does she relate her data to the wider issues of Buddhism and political action; nowhere does she discuss how the political actions of

successive rulers have been determined not by the Sangha but by the less substantive yet more the less real notions of what Buddhist politicians, statesmen and the polity should be. It is only within this much wider framework that the actions of the Sangha and the politicians can begin to make sense. Second, what this book lacks is any well developed set of analytical concepts. References to various 'authorities' in the opening section of each chapter are simply not adequate substitutes for a broad theoretical framework, and one wonders whether it is really necessary to test such hypotheses as 'the greater the importance of a particular issue as perceived by the leaders of a pressure group, the more intensive are the efforts to influence the decision making process'.

Furthermore, there are certain curious gaps in her data. This volume was published in 1976; the preface is dated November 15, 1975; it refers to events which took place in 1974. Yet in the text she refers to the most important political event of the last twenty years, the 1971 insurrection in which up to 50,000 people are said to have been killed. Finally, the preface states that this book, if there was any, is executable. I lost count of the misprints which must average more than one per page. I can only recommend this book to the specialist who has to know the way around the intricacies of Sri Lanka politics since independence.

R. L. Stirrat

Structure of a society

Thai Peasant Social Structure by Jack M. Potter University of Chicago Press, £13.15 ISBN 0 226 6735 8

In 1947 the American anthropologist John Embree visited Thailand and was greatly impressed with the contrast between what he observed and his experiences in present Japan. The articles on Thailand, a loosely structured social system', published posthumously in 1950, was a preliminary attempt to specify the main characteristic of Thai culture and social organization. It subsequently achieved an important place in the anthropology of Thailand because it both supported and 'explained' later descriptive reports of individualism, impermanence of relations and obligations, and the absence of a strong sense of duty; all features which cumulatively convey the image of amorphousness. Despite the considerable scepticism of some about both its theoretical value and its appropriateness for the overall description of rural Thailand the idea of loose structure has survived as an important influence on most anthropologists working there.

Potter's goal, the final repudiation of this perspective, is expressed

at both descriptive and theoretical levels. In the manner of 'spiteful ethnography' he documents these features of a northern Thai village which embody all that the loose structuralists find lacking. Although his unit of study, Chiangmai village, is divided into two administrative units it is a physically distinct unit whose members support a single village school and temple. In a country where descent is generally classified as cognatic Potter notes the existence of matrilineal groups and ancestral cults. As is not unusual in the valleys of northern Thailand villagers participate in long-established associations for the maintenance and repair of irrigation systems. While acknowledging the divisions caused by variations in wealth, especially in land, Potter emphasizes the image of Chiangmai as a stable and discrete community where the multiple principles of association are expressed in a web of cross-cutting relations which create a high degree of integration and simultaneously incorporate into society the idea of loose structure. With its clear exposition of those features of village life which reflect the author's analytical intentions the book is a valuable contribution to the ethnography of a region whose distinctive forms and

problems have been inadequately appreciated.

The final chapter is a comparative essay comprising a third of the book in which the Chiangmai data is integrated with a careful interpretation of published village studies. From very varied sources Potter isolates 11 structural elements: 'the extended-stom family cycle (including the compound), the bilateral kindred, neighborliness and formal neighborhoods', and 'cooperative labor-exchange groups' among others, which seem common to most Thai villages and may be said to 'generate Thai communities'. Useful as this essay is it is not an account of peasant social structure; neither 'peasant' nor social structure are anywhere defined. Indeed, the so-called structural elements are essentially descriptive generalizations, what Geertz in his study of Balinese villages termed 'levels of organization'. It is curious that Potter does not support his thesis, which he theorizes as 'peasants are partly responsible for the illusion of loose structure, by referring to another study of the same village under a different name first published in 1960.

Jeremy Kemp

African and Asian Books

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BOOKS

New proletarians

The Development of an African Working Class: Studies in Class Formation and Action
Edited by Richard Sandbrook and Robin Cohen
Longman, £8.00 and £3.50
ISBN 0 582 64179 9 and 64180 2
Nigeria: Economy and Society
Edited by Gavin Williams
Red Collings, £5.25
ISBN 0 86036 0156

With the growth of industry in the developing countries there emerges a new working class or proletariat. For radicals the vital question is the role of this group in the transformation of society. Will it alone be the revolutionary class (Marx) or ally with the peasantry (Lenin); will it provide leadership for an essentially peasant movement (Mao) or will it contribute nothing (Panon)? Unconsciously perhaps, most of us apply models developed in the study of western industrial society, seeking for a culture-laden stereotype of proletarian consciousness.

The papers in the volume edited by Sandbrook and Cohen derive from a conference which they organized in Toronto in 1973. They are of high quality and the collection has been well edited with introductions both to the whole and to the constituent parts. Throughout, one exception, the papers deal with English-speaking Africa, a fair balance is maintained between the eastern, western, central and southern countries of the continent.

In the first part, four contributors describe the stirrings of working-class consciousness in Kenya, Tanzania, Rhodesia and Zambia and Francophone West

Africa, pointing rightly to a long history of protest movements. But why, one asks, is the labour movement not stronger or more influential at the present time? Why is there so little apparent class consciousness today? The second and third parts, dealing with organization and action (though most papers overlap these two themes) provide answers. Here are some most valuable contributions in which the trades unions are viewed not from the top but from the bottom; the authors have viewed the strikes which they describe from the shop floor and they reinforce vividly the oft-remarked distance separating union leadership from the rank and file. Both Peace and Jeffries writing of Nigeria and Ghana respectively, describe the populist demands and generally anti-government feelings inspired by the strikers and challenge the thesis of a labour aristocracy—the rather lame defence of which by Saul provides a weak conclusion to the volume.

In its focus upon trade union activity and formal protests, the book perhaps allows the reader to forget that the African working class differs from western counterparts in two important respects—first, its members are not fully committed to wage employment, retaining strong links with their rural homes from whence they have migrated, and second the wage small minority of the working population even in the urban areas. But it is these factors, recognized by most contributors, which give rise to such apparent paradoxes as the juxtaposition of bourgeois aspirations for success as

small entrepreneurs. One is late to think one's concepts, but one of the most positive contributions of the volume, if it is read not only by scholars but by all those interested in the movements elsewhere in the world, for the questions posed are relevant and may be dealt with from established and sterile premises. In his collection of essays research has hitherto made crucial questions of human Nigerian society. His book is a novel approach. In his collection of essays research has hitherto made crucial questions of human Nigerian society. His book is a novel approach. In his collection of essays research has hitherto made crucial questions of human Nigerian society. His book is a novel approach.

Peter D.

Malaysian historiography

A History of Malaysia and Singapore
by N. J. Ryan
Oxford University Press, £16.00
ISBN 0 19 580302 7

First published in 1963, this fifth and enlarged edition incorporates a wealth of more recent scholarship and brings the history up to the early 1970s. As an introductory work it contains a fund of chronological and geographical data, as well as some evocative photographs and a number of helpful maps.

Teachers who have previously relied on the late Sir Richard Winsted's *A History of Malaya* will find Ryan's work, in comparison, less erudite but more lucid. And Ryan not only incorporates into the narrative the territories of Sarawak and Sabah, which entered the Malaysia Federation in 1963, but gives greater attention than does Sir Richard to the period of colonial rule and the development of a plural society. In particular, Ryan provides lengthy accounts of the establishment of both the Chinese and Indian communities, which together were to make up half the population of Peninsular Malaya, and he also examines in some detail the British decontrol policy of the inter-war years which aimed to protect Malay interests.

The publishers describe the book

as a "definitive students' text", but definitive histories, even if desirable, are difficult to write, and *A History of Malaysia and Singapore* has some serious deficiencies. It is not true, for instance, that the content states "played little part" in the eighteenth century history of the Peninsula. Trengganu was a major commercial, political and cultural centre, and a Chinese account of the early 18th century, Kelantan had long been the destination of a large number of Chinese miners, and many of the effects of the Malay-Indonesian trade relations were expected to take into account recent research on the relationship between China and the Malay world, and the possible connexion between the fifteenth-century Sultanate of Malacca and the earlier Srivijayan empire.

But in attempting a synthesis of knowledge of Malaysia, to use the author's own words, the book has more serious faults. It fails to convey the problematic nature of many of the issues examined. Scholars do learn the names of the scholars whose monographs form the basis of Ryan's history, nor is he concerned to discuss the primary sources, travellers' accounts, government archives, and newspaper reports, which constitute the source material for Southeast

Asian history are liable to a variety of interpretation, a tendency towards relativism, further encouraged by the political attitudes and by the influence of the social sciences.

"Historical knowledge" of Malaysia is more concrete than coherent at present. Part of it is being re-examined, and interpretations are emerging. It has been considerable debate, history, regarding both the effects of British colonial policy on the Malay and Indonesian archipelago, and the character of the archipelago. The limitations and uses of the source have been discussed by historians and philologists, and a little help from anthropologists and several scholars have been deriving the organization and the traditional Malay political terms.

In playing down such disputes, this Ryan maintains the history narrative but disguises the weaknesses which makes Malaysian history attractive.

A. C. M.

BOOKS

Job seekers

Surplus Labour and the City: A Study of Bombay
by Heather and Vijay Joshi
Oxford University Press, £5.25
ISBN 0 19 560631 0

In the 1970s the development debate has become much concerned with "urban bias". The United Nations has forecast that urban population in non-communist developing countries will grow annually at 4.1 per cent to the year 2000, a rate substantially in excess of population growth and high even in relation to historical experience in the West. Capital-intensive industrial production concentrated in cities has raised wages far above the level of incomes in rural areas. This, it is often argued, has induced a larger migration of job seekers than can find regular employment, many of whom will over into work in an "informal sector" of small traders, workshops, and services, or into unemployment.

The Joshi's study looks at the development of employment in India's second largest city mainly over the period between the Indian censuses of 1961 and 1971. Census data are supplemented by an impressively wide variety of other statistical and fieldwork sources, though the authors apparently did not conduct fieldwork of their own. Defining the "formal" or "organized" sector as firms (or government agencies) employing more than 25 workers, the "informal" sector is found to have accounted for half of the 1961 workforce, and subsequent "organized" sector growth has provided only about 40 per cent of new jobs. Wage differentials between the two sectors are substantial, at least 100 per cent for "organized" unskilled workers, reflecting a combination of trade union power, higher wages paid by western firms, and a screening off of educated workers from among those seeking employment.

In the "informal" sector, over half the workers are in wage employment, but (excluding the 25 per cent of wage earners in domestic service) their employers have only four employees on average. In addition to the expected predominance of trade and services, about a quarter of the sector's workforce is engaged in manufacturing, with

metals and engineering the most important single category—supporting the authors' contention that the sector is a significant repository of industrial skills. Most of the findings of this competent and careful study primarily provide supporting evidence to those of other research, including the International Labour Office missions to Kenya, Colombia and Sri Lanka. Yet one particularly interesting and unexpected result emerges: that the growth of organized sector employment in Bombay does not seem to have attracted more migrants than there were jobs. Recruiting by "organized" sector firms is done to a large extent through personal contacts of existing employees, thus concentrating migration on a small number of points of origin and raising hopes that those who arrive without contacts could secure such employment.

In general, the evidence of "graduation" in Bombay from "informal" to "organized" sector is slight, partly also because the latter tends to require (often unnecessary) educational qualifications. Real incomes in the "informal" sector, however, are found to be slightly in excess of those in surrounding rural areas, providing themselves incentives to migration. Limited upward movement does occur within the "informal" sector, with some evidence of new migrants first entering construction or services before perhaps securing better-paid work in small-scale manufacturing. Open unemployment is slight, and more common among educated workers.

The book's policy recommendations differ little, for example, from those of the World Bank's influential *Rethinking with Growth* study, which would shift resources towards the "informal" sector, though recognizing that without simultaneous rural improvements successful urban development could induce increased and self-defeating labour inflows. Important, too, is a need to ease the informal sector from bureaucratic restrictions; and for the authorities in India, and elsewhere, to regard it as a significant source of future growth rather than, in the Joshi's pungent phrase, "a motley collection of raff raff with little productive potential".

John Thornburn

Hunters

Kalahari Hunter-Gatherers: Studies of the !Kung San and Their Neighbours
edited by Richard B. Lee and Irven DeVore
Harvard University Press, £13.90
ISBN 0 674 49980 8

Until the development of agriculture, only about 12,000 years ago, all mankind lived entirely by hunting and gathering. The Bushmen of South Africa are one of the few remaining groups of people who hunt and gather for nearly all their subsistence; and according to Lee it is this which makes the study of Bushmen so especially important for anthropology.

The !Kung, one of several Kalahari Bushman peoples, inhabit the tree savannah region of north-western Botswana. Thanks to an abundance of nutritious vegetable foods in the region, !Kung women need spend only a few hours a day in pursuit of food. Men spend much of their time hunting and talking about hunting, and they show great interest in and knowledge about animal behaviour. They give meat, and also non-consumable possessions, through wide-ranging exchange networks. Hoarding is considered anti-social, and no one openly strives to gain either material wealth or prestige.

Four general topics are treated in the book: ecology and social change, population and health, childhood, and behaviour and belief. The major emphasis is on the !Kung, but two chapters deal with other Bushman peoples. "Guenther's paper on the !Kung population of the Ghanzi cattle ranches shows, external pressures are causing rapid changes in traditional Bushman economic life and territorial organization, and to a lesser degree, in other aspects of culture. But it is interesting that their religious beliefs and their ritual curing dances have not been much affected; if anything, social change in other spheres has led to an increase in ritual activity (even the !Kung population of the Ghanzi ranches lived during his fieldwork) Bushmen today want to own their own cattle and goats, but all too often they end up as mere herdboys for wealthier white and black stockkeepers. Appropriately, the book is dedicated to future generations of Bushmen.

Kalahari Hunter-Gatherers is the result of more than a decade of superb fieldwork on !Kung demography, subsistence ecology, nutrition, cosmology, folklore and social change, by the Harvard Kalahari Research group and others. Unlike traditional social anthropological monographs, this collection is bound to be of interest (and of use) to prehistoric archaeologists, psychologists, human biologists and, no doubt, general readers as well. Although it could be argued that all this intensive data-collecting on one people has been done at the expense of basic research on other African hunter-gatherers, the unique detail and diversity of material on the !Kung is (as Sherwood Washburn says in his foreword) "an ideal demonstration of what the science of anthropology can do".

Unfortunately, however, there are a number of factual errors. In particular several of the contributors seem to be somewhat muddled about linguistic classification. Henry Harpending asserts incorrectly that !Kung and Nama are mutually intelligible. Lee calls E. O. J. Westphal's language families "groups", and Guenther calls D. F. Bleek's language groups "families" and falsely quotes Bleek as having written that "Amka, in the ethnic name 'Kwankwara' (Mouth People, or Mouthless People) means 'weak' (hence Weak People). Others display remarkable ignorance of early and even recent literature on the Khoisan peoples.

Finally, how can the editors insist on the supposedly complicated term San (actually, a derogatory Nama word for Bushmen) and at the same time use the derivative term "Hottentots" (for Khoikhoi) throughout the book? It is a pity that such a significant and otherwise illuminating book is marred by parochialism and careless scholarship.

Alan Barnard

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Universities continued

OXFORD THE UNIVERSITY COMMITTEE FOR COMMONWEALTH STUDIES... Applications are invited for the post of Research Officer...

MANCHESTER THE UNIVERSITY... Applications are invited for the post of Lecturer in Social Anthropology...

NEWCASTLE UPON TYNE THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

OXFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Law...

OXFORD WADHAM COLLEGE... Applications are invited for the post of Lecturer in Law...

READING THE UNIVERSITY... Applications are invited for the post of Lecturer in Agricultural Economics...

SALFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Social Administration...

OXFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Social Anthropology...

STRATFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

LONDON, W.C.1 THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

ST. ANDREWS THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

STRATFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

WARWICK THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

Fellowships and Studentships University of Cambridge Department of Geography Hunting Group Scholarship... The Scholarship is intended to provide opportunity for research...

LONDON THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

Polytechnics Faculty Administrative Officer £4,422-£5,142... Required in the Engineering Faculty...

THE POLYTECHNIC OF WALES POLYTECHNIC CYMRU... Applications are invited for the post of Lecturer II Senior Lecturer...

CITY OF BIRMINGHAM THE POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

LEICESTER THE POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

CITY OF LONDON THE POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

LONDON THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

LIVERPOOL THE POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

CITY OF LONDON THE POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

MANCHESTER THE POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

SHEFFIELD CITY POLYTECHNIC... Applications are invited for the post of Lecturer in Education...

LINCOLN BISHOP TROSCHELE COLLEGE... Applications are invited for the post of Lecturer in Education...

LONDON INNER LONDON EDUCATION AUTHORITY... Applications are invited for the post of Lecturer in Education...

Hull College of Higher Education... Applications are invited for the post of Lecturer in Education...

CREWE AND ALSAGER COLLEGE OF HIGHER EDUCATION... Applications are invited for the post of Lecturer in Education...

LANCASHIRE COLLEGE OF HIGHER EDUCATION... Applications are invited for the post of Lecturer in Education...

LANCASHIRE COLLEGE OF HIGHER EDUCATION... Applications are invited for the post of Lecturer in Education...

DORSET INSTITUTE OF HIGHER EDUCATION... Applications are invited for the post of Lecturer in Education...

DEPUTY DIRECTOR (Academic Planning) Cheimer Institute of Higher Education... Applications are invited for the post of Deputy Director...

STATISTICS OFFICER (re-advertisement) Previous applicants need not re-apply... Applications are invited for the post of Statistics Officer...

OXFORD LOCAL EXAMINATIONS Appointment of Assistant to the Secretaries/Assistant Secretary... Applications are invited for the post of Assistant Secretary...

THE ROYAL IRISH ACADEMY EXECUTIVE SECRETARY... Applications are invited for the post of Executive Secretary...

LANCASTER THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

LANCASTER THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

Colleges and Institutes of Technology ABERDEEN ROBERT GORDON'S INSTITUTE OF TECHNOLOGY... Applications are invited for the post of Lecturer in Education...

SCOTT SUTHERLAND SCHOOL OF ARCHITECTURE LECTURER IN ARCHITECTURE AND PLANNING... Applications are invited for the post of Lecturer in Architecture and Planning...

Teachers of EFL required for intensive and general courses... Applications are invited for the post of Teacher of English as a Foreign Language...

UNIST DEGREE OF M.Ed. with TEACHING OF ENGLISH AS A FOREIGN LANGUAGE... Applications are invited for the post of Lecturer in Education...

RDINBURGH POSTGRADUATE DIPLOMA IN RECREATION AND LEISURE PRACTICE... Applications are invited for the post of Lecturer in Education...

BRADFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

BRADFORD THE UNIVERSITY... Applications are invited for the post of Lecturer in Education...

Colleges of Higher Education continued... Includes sections for Lincoln, Hull College, and Crewe and Alsager College.

Hull College of Higher Education... Advertisement for Hull College of Higher Education.

Crewe and Alsager College of Higher Education... Advertisement for Crewe and Alsager College.

Crewe and Alsager College of Higher Education... Advertisement for Crewe and Alsager College.

Crewe and Alsager College of Higher Education... Advertisement for Crewe and Alsager College.

Colleges of Higher Education... Advertisement for various colleges.

Colleges of Higher Education... Advertisement for various colleges.

Colleges of Higher Education... Advertisement for various colleges.

Colleges of Higher Education... Advertisement for various colleges.

Colleges and Institutes of Technology... Advertisement for various technology institutes.

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